1982

Design and Construction, p. 121-160

Margaret Brown

Linda McWilliams

Donald Etherington

C. COVERING TECHNIQUE OF BASE SHELL

1. COVERING SHELF BOARD
Take the SHELF BOARD and cut a piece of COVERING MATERIAL the following size:

Length: Exact length of SHELF BOARD

Width: Width of SHELF BOARD
plus the height of the SPINE WALLS of the BASE SHELL
plus 3/4"
(This COVERING MATERIAL will eventually cover the SPINE WALLS of the shell extending over onto the inner side of the SHELL.)

Glue out the marked side of the SHELF BOARD and attach COVERING MATERIAL as shown in diagram 4. Put this under weights and set aside.

2. CUTTING AND GLUING OUT COVERING MATERIAL FOR PARTIALLY ASSEMBLED BASE SHELL

a. The outside of the BASE SHELL is covered with one piece of COVERING MATERIAL wrapped around the three walls. See diagram 5
The dimensions of this piece are:

Length: Distance around the outside of the three walls plus 2" (or whatever distance is needed to adequately cover SUPPORT BOARDS and extend into the PORTFOLIO SLOT at least 3/4" on each side.)

Width: Equals height measurement of the outside walls plus 1½" for turn-ins

Glue out the COVERING MATERIAL and adhere to the outside of the walls of the BASE SHELL. The cloth strip is positioned so that 3/4" extends above and below the edges of the BASE SHELL.

b. BASE SHELL bottom fore-edge turn-ins:
Turn the SHELL over and cut the COVERING MATERIAL of the fore-edge bottom corners as shown in diagram 5.

After cutting the COVERING MATERIAL at the corners, re-glue the unattached COVERING MATERIAL and turn in.

c. Cutting and gluing out COVERING MATERIAL for Cut "C"
See diagram 6 for instructions.

d. Covering BASE SHELL floor

Cut a piece of COVERING MATERIAL the following size:
Length: Exact length of SHELL floor

Width: Width of SHELL floor
plus 1" for turn-in on spine edge

Glue out and attach this piece to SHELL floor as shown in diagram 7.

3. COMPLETING ASSEMBLY OF BASE SHELL AND COMPLETING BASE SHELL WALL TURN-INS

a. SHELF BOARD with COVERING MATERIAL attached is slipped in the groove formed between the SUPPORT BOARDS and the inside of the WALL BOARDS. See diagram 7.

b. SPINE WALL BOARDS attached:
Glue the notched corner edges and base edges of SPINE WALL BOARDS and place in correct position as shown in diagram 8.

Glue out and turn in unattached COVERING MATERIAL that is to wrap around onto SPINE WALLS as shown in diagram 8.

Cut little TABS of COVERING MATERIAL and place them at the inside lower angled corners of the SPINE WALLS. See diagram 8.

c. BASE SHELL wall turn-ins:
1) Follow the directions for cutting COVERING MATERIAL of Corners "A" found in diagram 9.

Glue out and turn in all Tongues (T's) before gluing out and turning in Flaps. See detail in diagram 9.

2) The SPINE FLAP extending from the SHELF BOARD is now glued into place. The cutting pattern for the turn-ins is explained in diagram 10.

4. COVERING UNDERSIDE OF BASE SHELL
Cut a piece of PAPER (Bonding/Filler) 1/8" smaller on all four sides than the underside of the BASE SHELL, and similar in color to the COVERING MATERIAL, and glue it into place. The purpose of this PAPER is to effect a good bond between the SHELL and the CASE.

The BASE SHELL with PORTFOLIO SLOT is now completed except for lining the interior. See diagram 11. Do not proceed with lining until Steps III, IV and V have been completed.

III. LID SHELL

A. MEASURING AND CUTTING BOARDS FOR LID SHELL

See diagram 1. The shaded area of the LID SHELL indicates the dimensions of the LID BOARD.

1. LID BOARD

Length, head to tail: Length of covered BASE SHELL, plus 2 thicknesses of COVERING MATERIAL, plus 3 thicknesses of BOARD (1 thickness of BOARD is for clearance.)

Width, spine to fore-edge: Width of covered BASE SHELL, plus 1 thickness of COVERING MATERIAL, plus 1 thickness of BOARD

Cut one BOARD.

2. WALL BOARDS OF LID SHELL
Remember that the walls are made up of BOARDS designated INSIDE and OUTSIDE. See diagram 12.

Height of LID SHELL walls:

INSIDE BOARDS: Height is equal to the height of the covered BASE SHELL, plus 3 thicknesses of COVERING MATERIAL

Cut 3 BOARDS this height with their lengths approximately 3/4" longer than the LID BOARD

OUTSIDE BOARDS: Height is equal to height of INSIDE BOARDS plus 1 thickness of BOARD

Cut 3 BOARDS this height with their lengths approximately 3/4" longer than the LID BOARD.

Length of LID SHELL walls:
Cut the 3 INSIDE BOARDS and the 3 OUTSIDE BOARDS the following lengths:

Head and Tail Walls: Two INSIDE BOARDS equal to width of LID BOARD

Two OUTSIDE BOARDS equal to width of LID BOARD
plus 1 thickness of BOARD

Fore-edge Wall: One INSIDE BOARD equal to length of LID BOARD
minus 2 thicknesses of BOARD

One OUTSIDE BOARD equal to length of LID BOARD

Mark each BOARD either "INSIDE" or "OUTSIDE".

B. ASSEMBLING BOARDS TO MAKE LID SHELL

Glue the INSIDE BOARDS to the corresponding OUTSIDE BOARDS in correct patterns as shown in diagram 12. Press these BOARDS together.

Glue the assembled WALL BOARDS together forming two STEP-JOINTED CORNERS as shown in diagrams 12 & 13.

Glue LID BOARD edges and attach to WALL BOARDS.

C. COVERING TECHNIQUE OF LID SHELL

1. CUTTING, GLUING OUT AND TURNING IN THE COVERING MATERIAL FOR THE LID SHELL WALLS
   a. The outside of the LID SHELL is covered with one piece of COVERING MATERIAL wrapped around the three walls. See diagram 13. The dimensions of this piece are:

      Length: Distance around the outside of the walls of the LID SHELL
      plus 1½" for turn-ins

      Width: Double the height of the walls
      plus 1½" for turn-ins

      Glue out the COVERING MATERIAL and adhere to the outside of the walls of the LID SHELL. The cloth strip is positioned so that 3/4" extends below the bottom and beyond the spine edge of the LID SHELL walls.

b. LID SHELL bottom fore-edge turn-ins:
Turn the SHELL over and cut the COVERING MATERIAL at the bottom fore-edge corners as shown in diagram 5.

After cutting the COVERING MATERIAL at the corners, re-glue the unattached COVERING MATERIAL and turn in.

c. LID SHELL wall turn-ins:
Follow the directions for cutting COVERING MATERIAL at corners "A" and "B" as found in diagrams 14 & 15.

Glue out and turn in all Tongues (T's). Then follow numerical sequence for gluing out and turning in Flaps (F's) as shown in diagram 16.

2. CUTTING, GLUING OUT AND ADHERING COVERING MATERIAL FOR LID SHELL SPINE EDGE

The exposed spine edge of the LID SHELL is covered with one piece of COVERING MATERIAL. The dimensions of this piece are:

Length: Inside head to tail distance of the covered LID SHELL

Width: Approximately 1½"

Glue out the piece of COVERING MATERIAL and cover the spine edge by wrapping it around to the underside of the SHELL. See diagram 16.

Center the strip on the spine edge and after adhering, make four 45° angle cuts at head and tail, inside and underneath, as shown in diagram 16.

3. COVERING UNDERSIDE OF LID SHELL

Cut a piece of PAPER (Bonding/Filler) 1/8" smaller on all four sides than the underside of the LID SHELL, and similar in color to the COVERING MATERIAL, and glue it into place. The purpose of this PAPER is to effect a good bond between the SHELL and the CASE.

The LID SHELL is now completed except for lining the floor of the interior. See diagram 17. Do not proceed with lining until Steps IV and V have been completed.

IV. CASE

A. MEASURING AND CUTTING BOARDS FOR CASE

See diagram 18.

Note: All BOARDS for the CASE are the same thickness.

1. BASE and LID CASE BOARDS

Take covered LID SHELL and place on larger BOARD. Carefully mark the exact size of the SHELL on the BOARD.

Cut two BOARDS this size.

2. SPINE CASE BOARD

Length, head to tail: Same length measurement as above

Width: Equal to height of covered LID SHELL minus 3 thicknesses of COVERING MATERIAL

Cut one BOARD

B. COVERING TECHNIQUE OF CASE

1. CUTTING AND GLUING OUT COVERING MATERIAL FOR CASE

Take off the sharp tips of the fore-edge corners of BASE and LID CASE BOARDS. Place the three BOARDS in position as shown in diagram 18.

The correct width of the JOINT is hard to determine accurately. The following dimension is a minimum measurement, and through experience more accurate measurements will be found.

JOINT width: Equal to the thickness of BOARD used in CASE plus 5 thicknesses of COVERING MATERIAL (Note the BOARD and COVERING MATERIAL that was glued together for the MEASURING KIT.)

a. Cut one piece of COVERING MATERIAL with approximately 3/4" turn-in beyond the edges of the three BOARDS.

b. Cut another piece of COVERING MATERIAL that will cover the inside of the SPINE CASE BOARD and extend onto the BOARDS on either side. The dimensions of this piece are:

Length, head to tail: Equal to outside length of covered BASE SHELL

Width: Equal to width of SPINE CASE BOARD plus widths of 2 JOINTS plus 3/4" extensions onto both the BASE and LID CASE BOARDS

See diagram 18.

Glue out the larger piece of COVERING MATERIAL and adhere the three BOARDS.

2. CUTTING AND GLUING OUT COVERING MATERIAL FOR TURN-INS

Four outside corner turn-ins:
Follow the directions for cutting COVERING MATERIAL at the corners and gluing out turn-ins as found in diagram 18.

After cutting the COVERING MATERIAL at the corners, re-glue the unattached COVERING MATERIAL and turn in.

3. COVERING INSIDE OF SPINE CASE BOARD

Glue out the SPINE COVERING PIECE and place it on SPINE CASE BOARD equidistant from head and tail. See diagram 18.

The CASE is now completed.

V. GLUING BASE SHELL, LID SHELL AND CASE TOGETHER

A. GLUING BASE SHELL TO CASE

Glue out the bottom of the covered BASE SHELL and position it on the BASE CASE BOARD so that the SHELL is centered head to tail and flush with the spine edge of the BASE CASE BOARD. If you have positioned the BASE SHELL correctly, when the CASE is closed, the SPINE CASE BOARD should be vertical and touching the spine walls of the BASE SHELL.

Find appropriate FILLER BOARDS to fit within the PORTFOLIO SLOT and the SHELL and to extend at least 3/4" above the walls of the SHELL. Place filled SHELL in press and leave under pressure a minimum of 20 minutes.

B. GLUING LID SHELL TO CASE

Position the LID SHELL over the BASE SHELL and carefully glue out the bottom of the LID SHELL. Lift the CASE and wrap it around the SHELL. If you have positioned the SHELL ocrrectly, the head and tail of the LID SHELL should be flush with the head and tail of CASE, and the SPINE CASE BOARD should be vertical and touching the spine edge of SHELL walls. Turn BOX over and then open it making sure the LID SHELL remains in position.

Find appropriate FILLER BOARDS to fit within the SHELL and extend them at least 3/4" above the walls of the SHELL. Place filled SHELL in press and leave under pressure a minimum of 20 minutes.

The BOX is now ready for lining.

VI. LINING THE INTERIOR OF THE BOX

A. MEASURING, CUTTING AND GLUING OUT LINING MATERIAL

In these directions FELT is used as the LINING MATERIAL. Always line the FELT with similar colored PAPER. The PAPER lining allows for more accurate cutting. Always glue out the PAPER rather than the FELT to prevent the ADHESIVE from striking through the FELT.

1. LINING the BASE SHELL

   a. Floor of BASE SHELL
   Cut lined FELT to the exact size of the BASE SHELL floor.
   Glue out lined FELT and adhere to BASE SHELL floor.

   b. Interior walls of BASE SHELL
   Cut the lined FELT to fit the inside of walls leaving 1/16" of COVERING MATERIAL exposed at top edges. On SPINE WALLS have FELT conform to angled shape leaving 1/16" of COVERING MATERIAL exposed at edges.

   Glue out lined FELTS and adhere to interior walls.

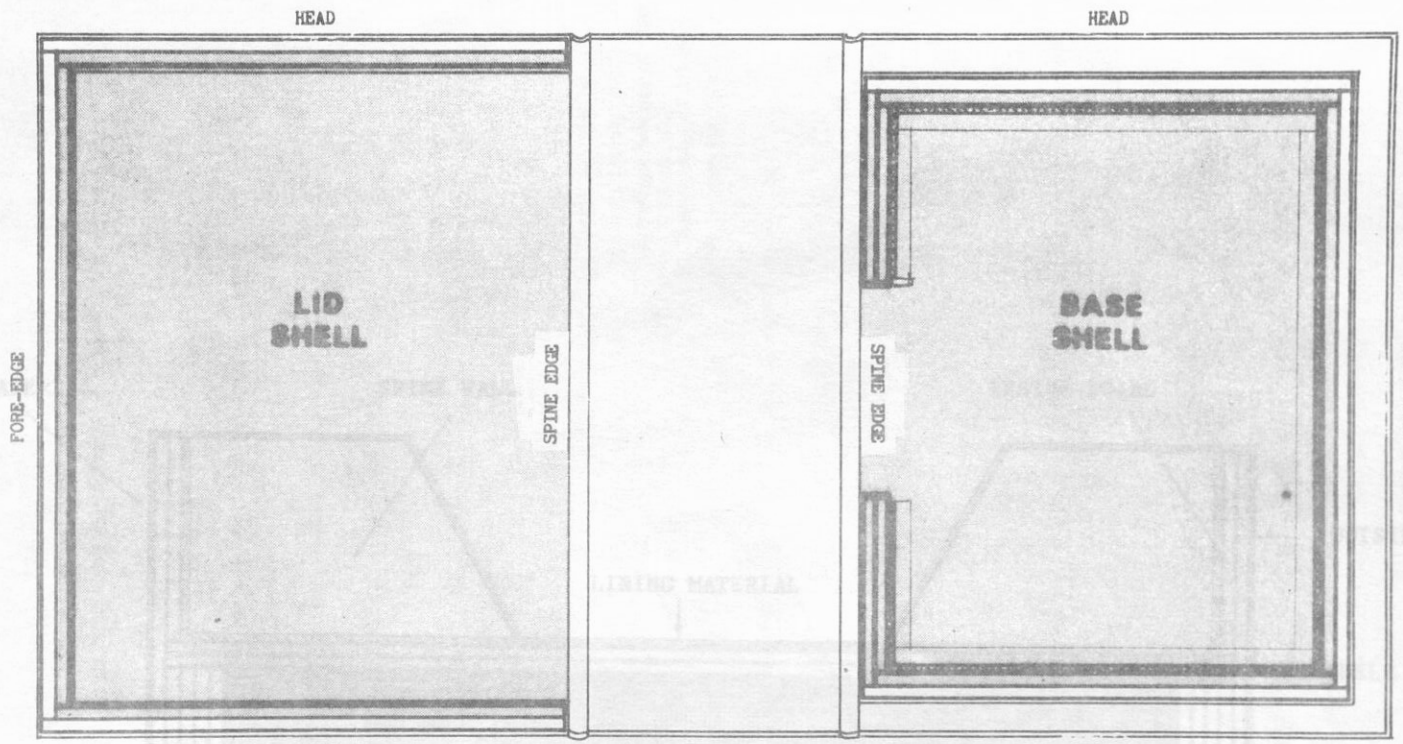
2. LINING the LID SHELL
   Cut lined FELT slightly smaller than the inner dimensions of the BASE SHELL.

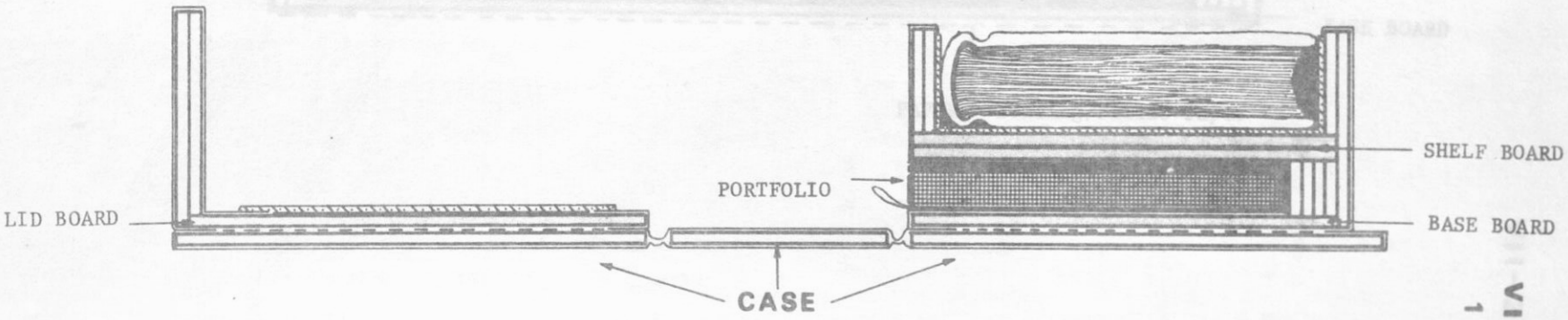
   Glue out and position the lined FELT on LID floor exactly above the inner BASE SHELL area.

The BOX is now finished. See diagram 19. Remember to allow BOX to dry completely before inserting Portfolio and Book.

FINIS

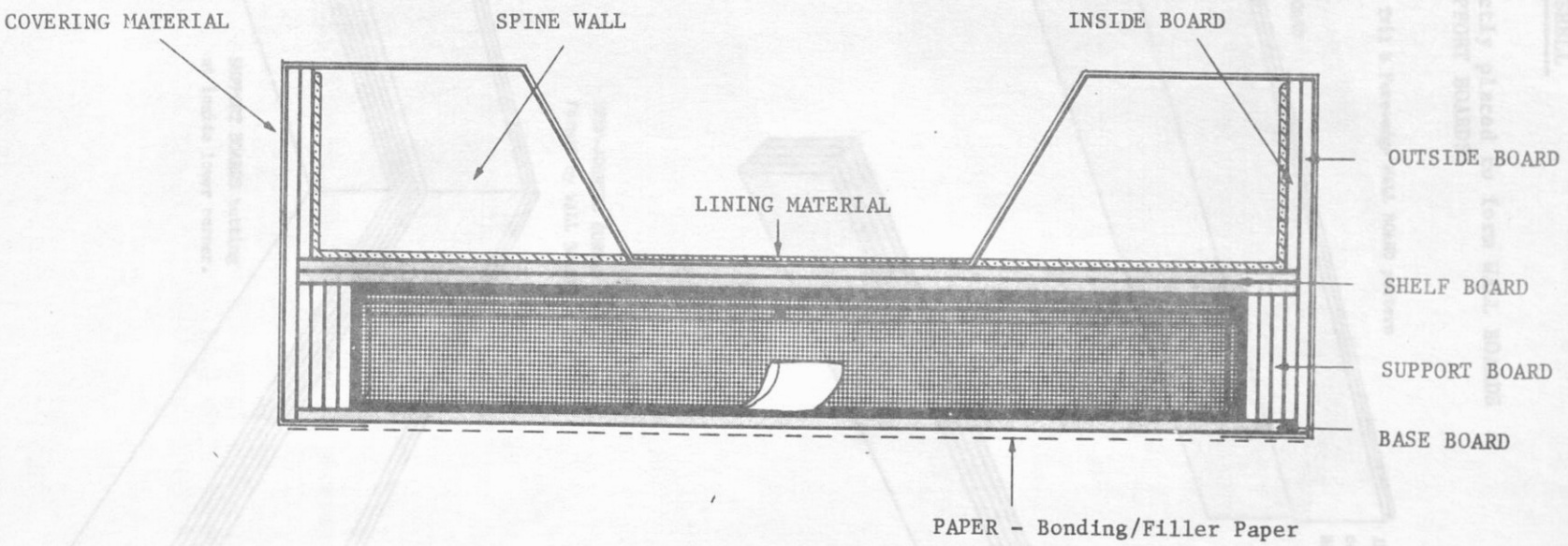
Plan of opened STANDARD RARE BOOK BOX with PORTFOLIO SMALLER THAN BOOK





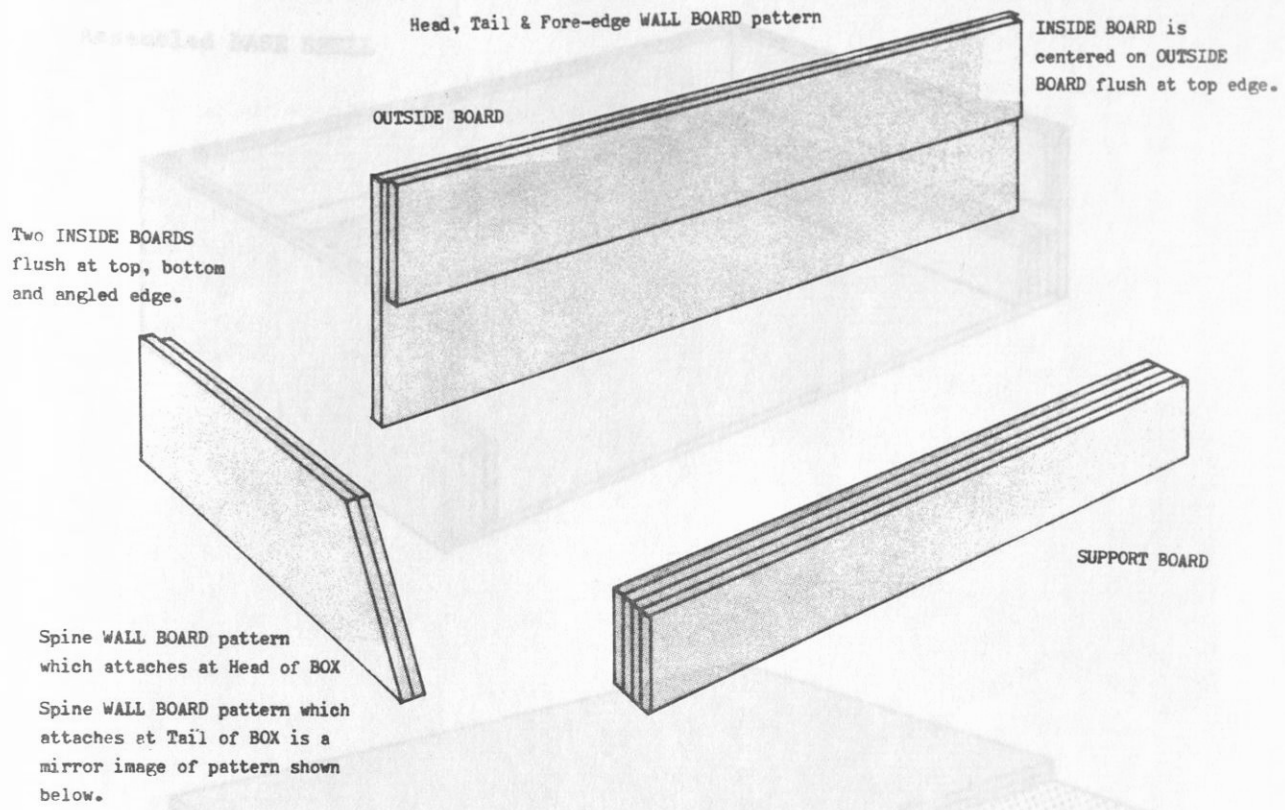
VII-1

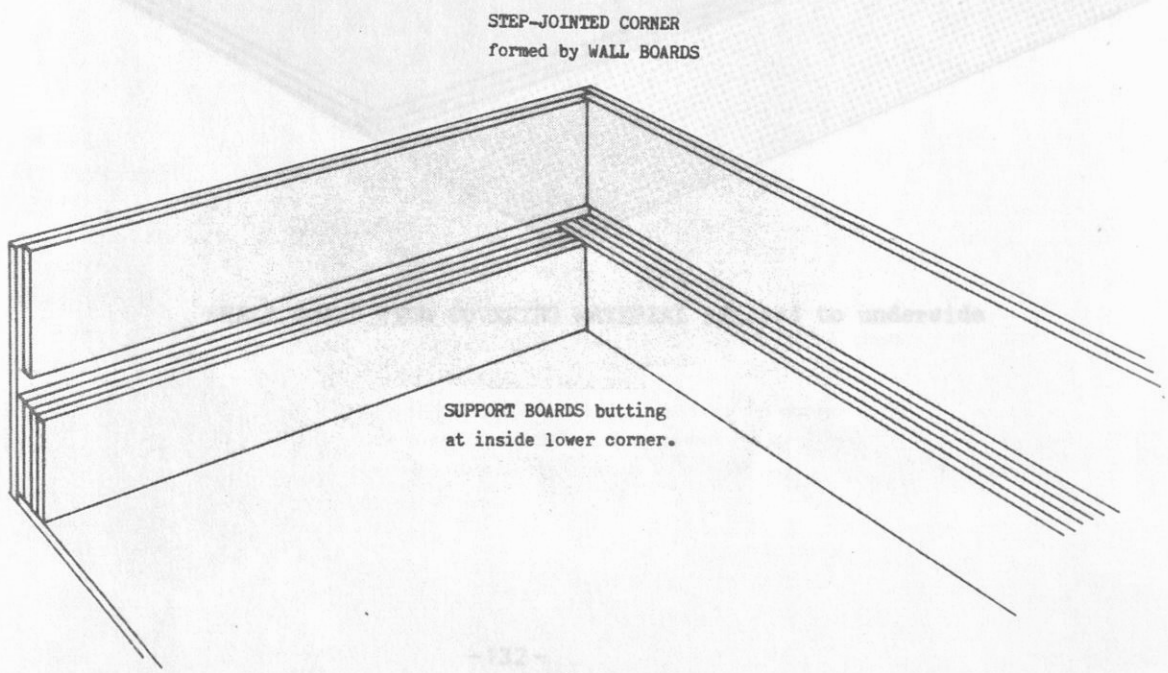
SPINE ELEVATION OF BASE SHELL WITH PORTFOLIO SLOT



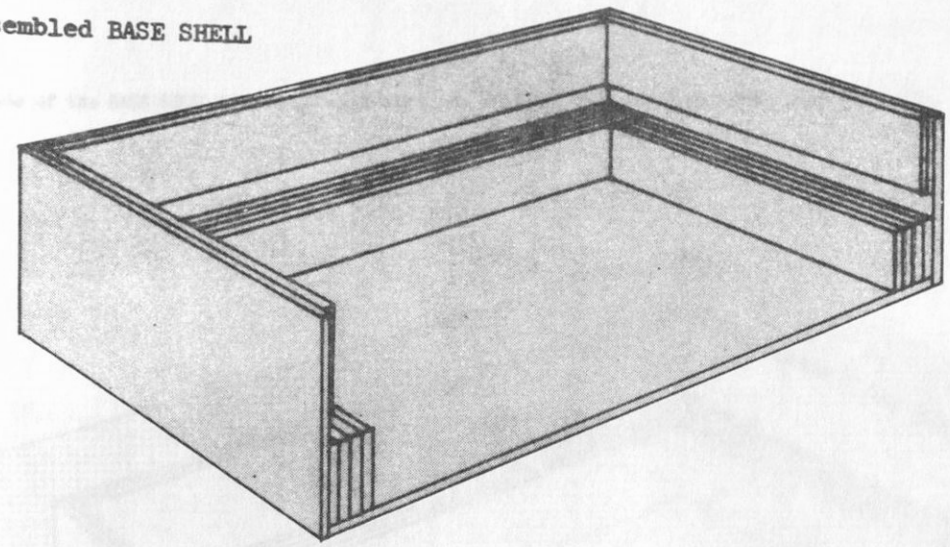
ASSEMBLING BOARDS TO MAKE BASE SHELL

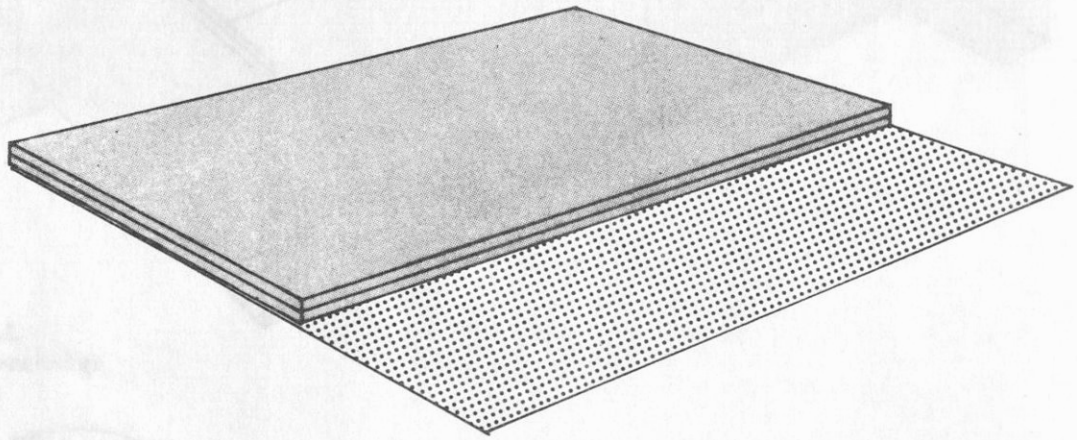
INSIDE and OUTSIDE BOARDS correctly placed to form WALL BOARDS and BOARDS assembled to form SUPPORT BOARDS





Assembled BASE SHELL



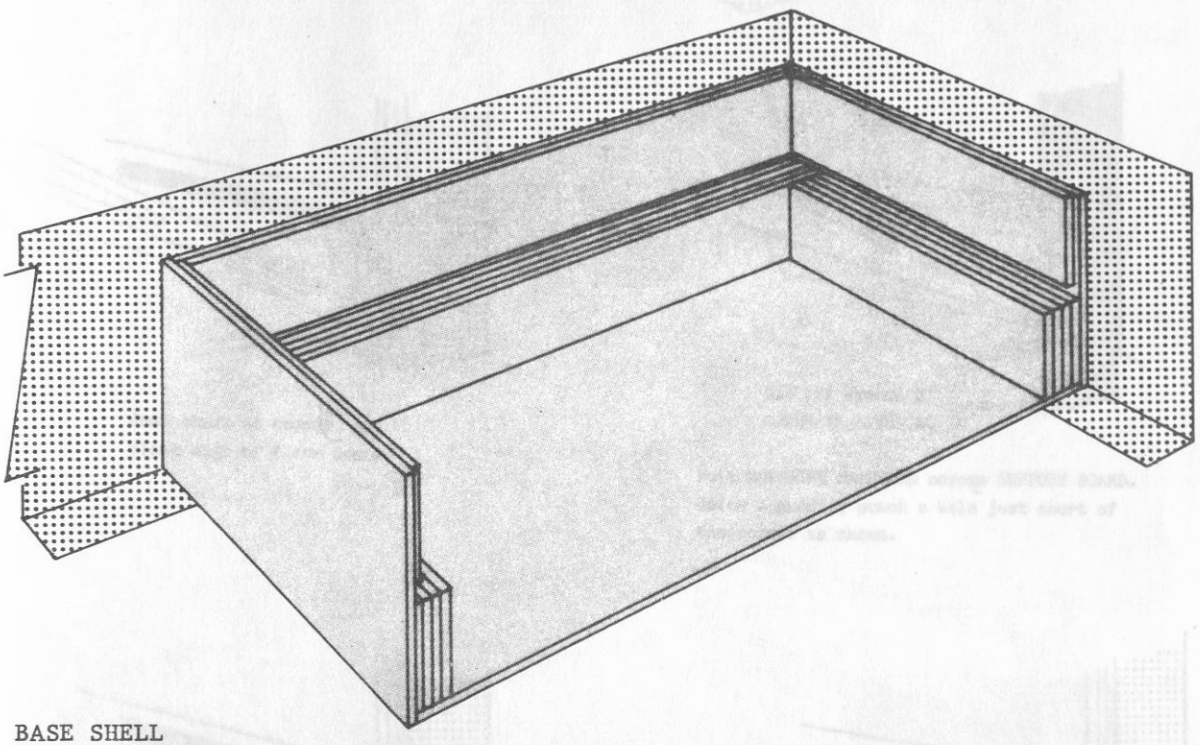


SHELF BOARD with COVERING MATERIAL adhered to underside

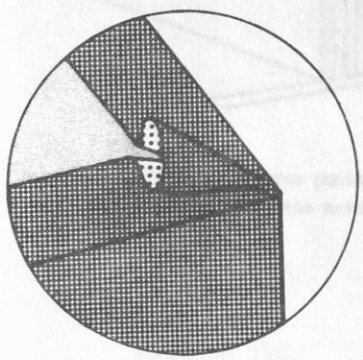
COVERING TECHNIQUE OF BASE SHELL

BASE SHELL wall turn-ins:

The outside of the BASE SHELL is covered with one piece of COVERING MATERIAL wrapped around the walls.



BASE SHELL bottom fore-edge turn-ins:



Turn SHELL over.

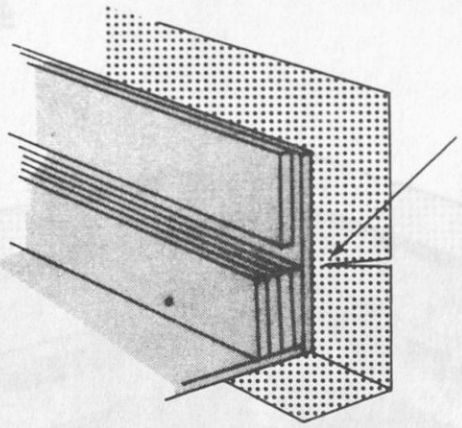
Pinch the COVERING MATERIAL together at the corner as shown.

With a pair of scissors cut away the excess COVERING MATERIAL being careful not to expose the BOARD at the corner of the SHELL.

COVERING TECHNIQUE OF BASE SHELL

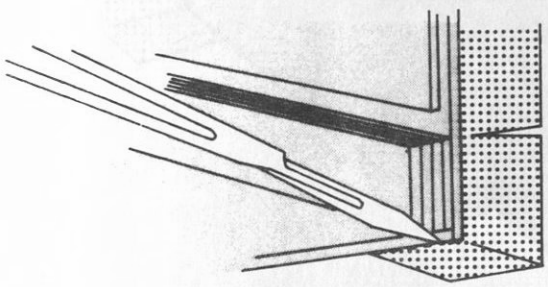
Cutting COVERING MATERIAL

for CUT "C"

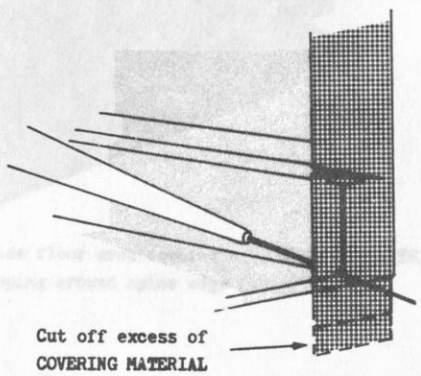


Start cut away from wall edge a distance equal to thickness of OUTSIDE WALL BOARD.

Cut on slight upwards angle so that there will be enough COVERING MATERIAL to cover SUPPORT BOARD.

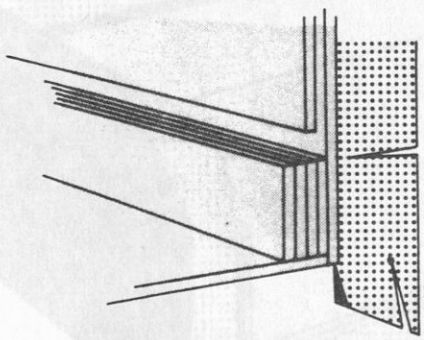


Just short of corner, cut along edge of floor board.

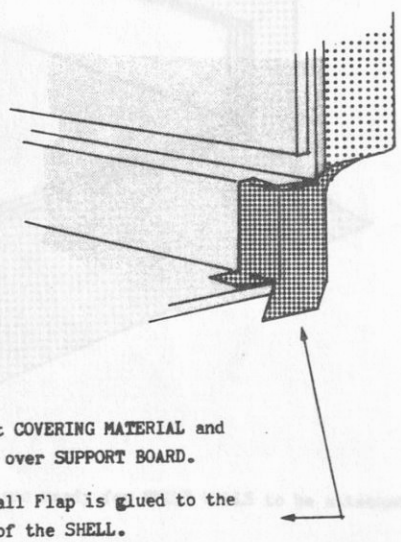


Cut off excess of COVERING MATERIAL

Pull COVERING MATERIAL across SUPPORT BOARD. Using a needle, punch a hole just short of the corner as shown.



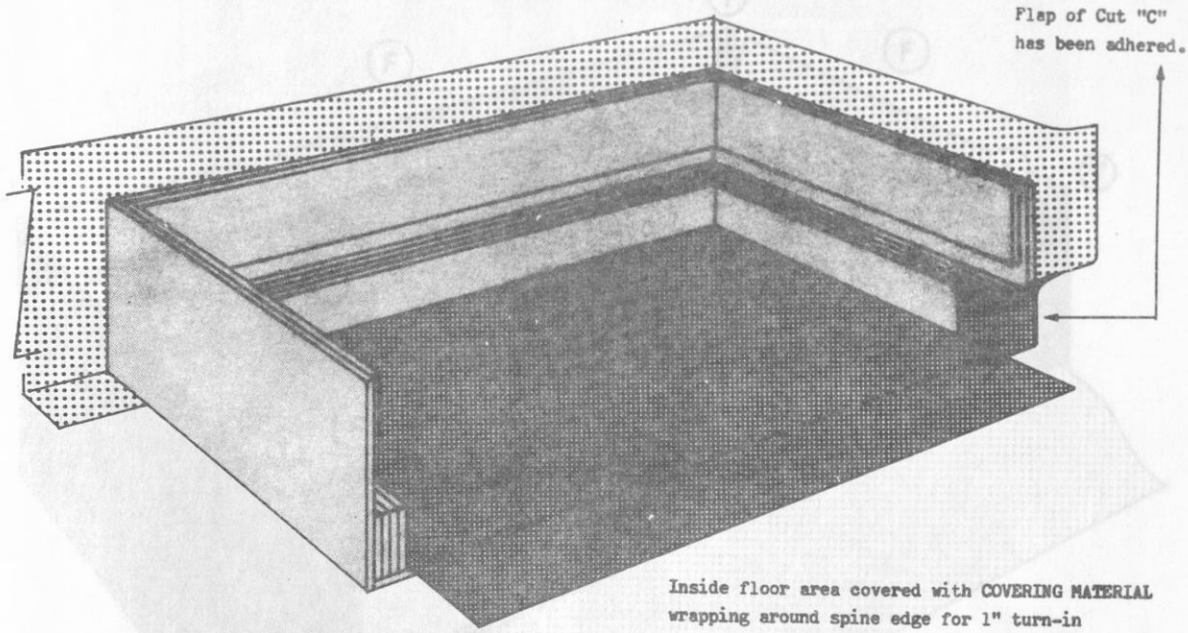
Make two 45° cuts, one from punched hole, the other one from the corner. Discard shaded area.



Glue out COVERING MATERIAL and turn in over SUPPORT BOARD.

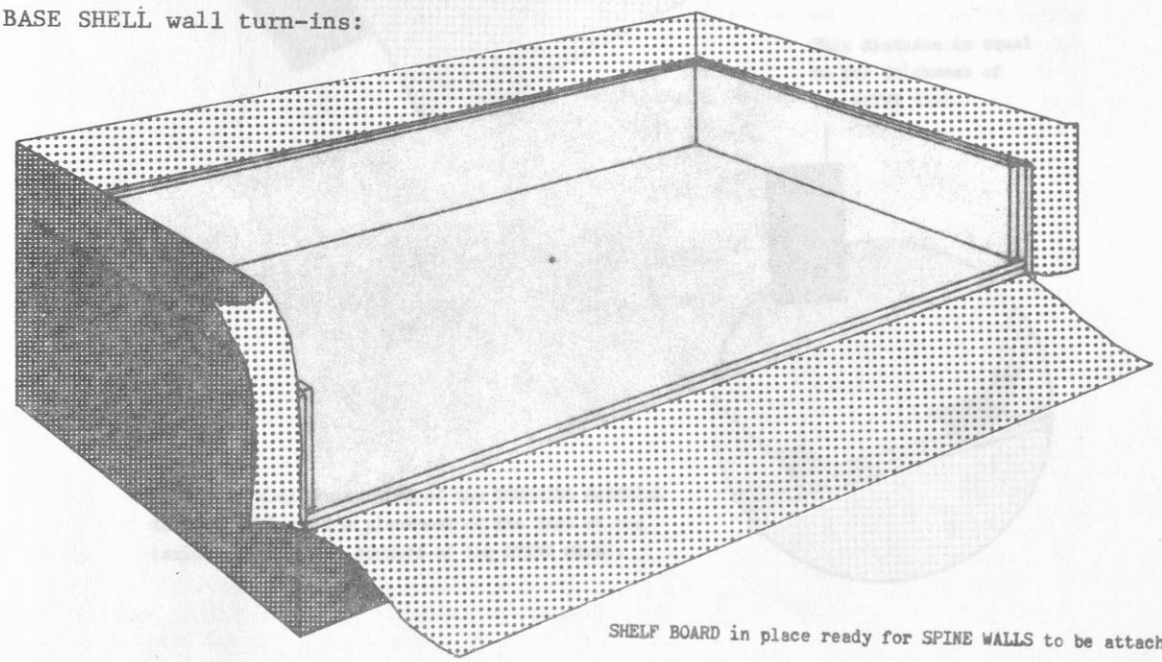
This small Flap is glued to the bottom of the SHELL.

COVERING TECHNIQUE OF BASE SHELL



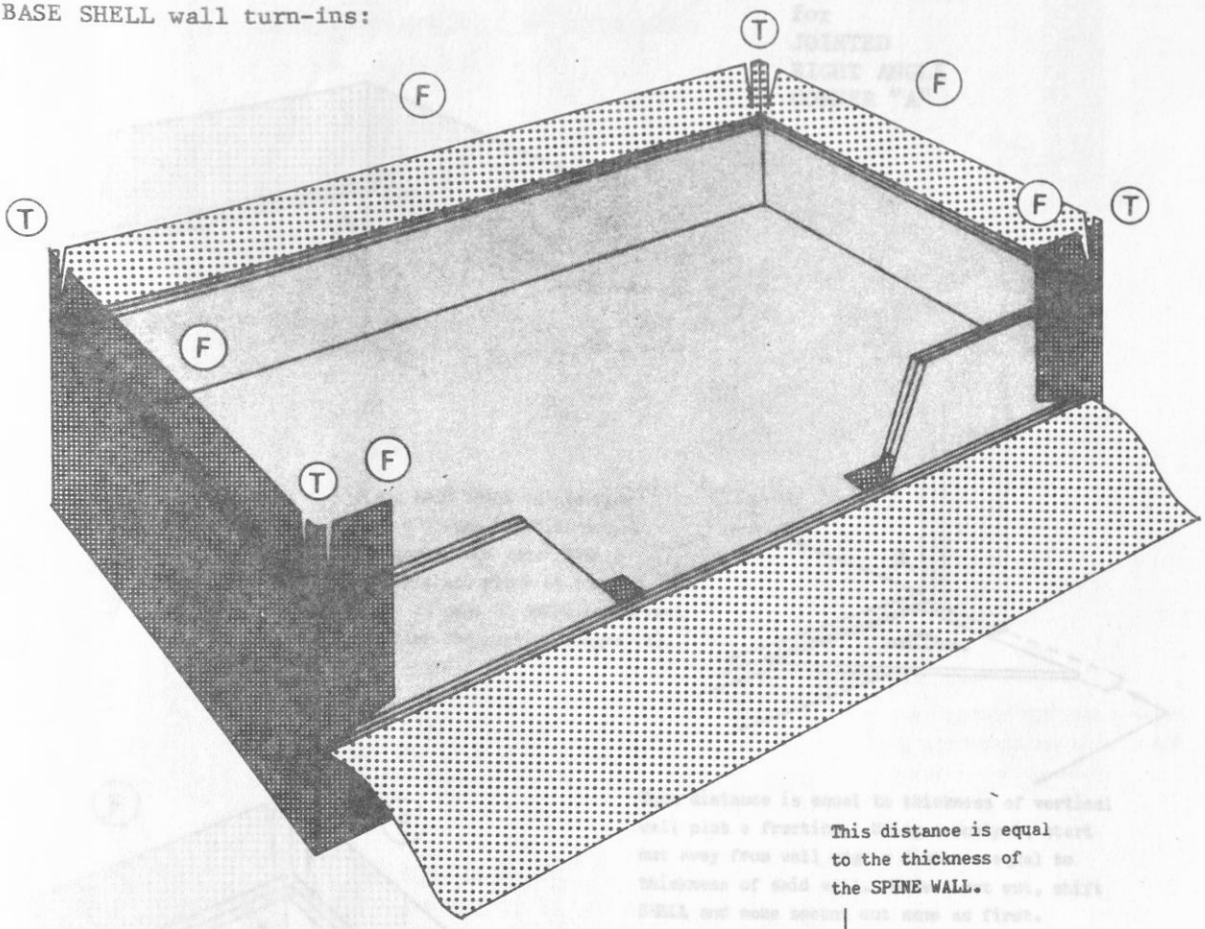
Inside floor area covered with COVERING MATERIAL wrapping around spine edge for 1" turn-in

BASE SHELL wall turn-ins:

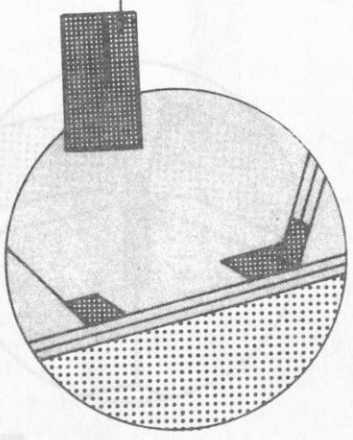


SHELF BOARD in place ready for SPINE WALLS to be attached

BASE SHELL wall turn-ins:

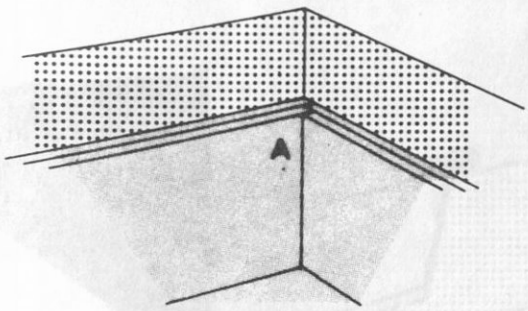


This distance is equal to the thickness of the SPINE WALL.

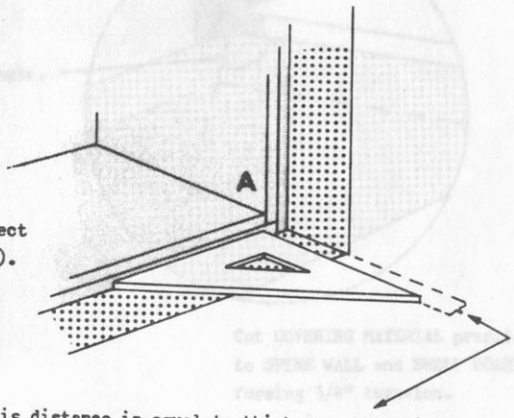


Detail showing the cutting of the COVERING MATERIAL to form TABS and the placement of the TABS at the inside lower angled corners of the SPINE WALLS.

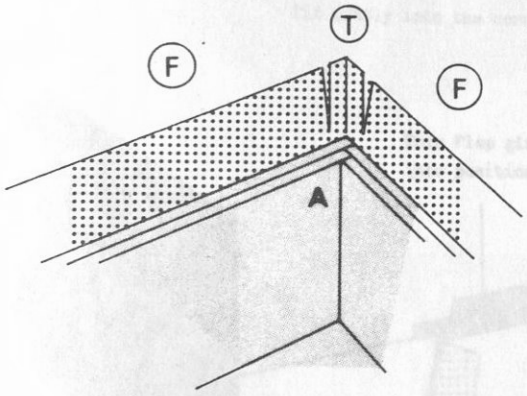
Cutting COVERING MATERIAL
for
JOINTED
RIGHT ANGLE
CORNER "A"

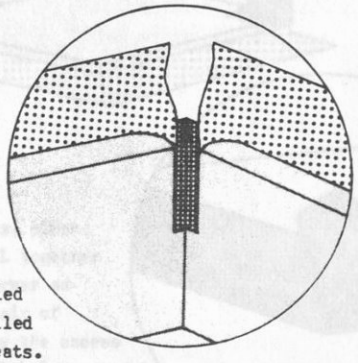


Place BASE SHELL on its side with COVERING MATERIAL projecting toward you. Take a triangle and place at a right angle to edge of SHELL in correct position for cutting Tongue (T).



This distance is equal to thickness of vertical wall plus a fraction. Using a scalpel, start cut away from wall edge a distance equal to thickness of said wall. Make first cut, shift SHELL and make second cut same as first.

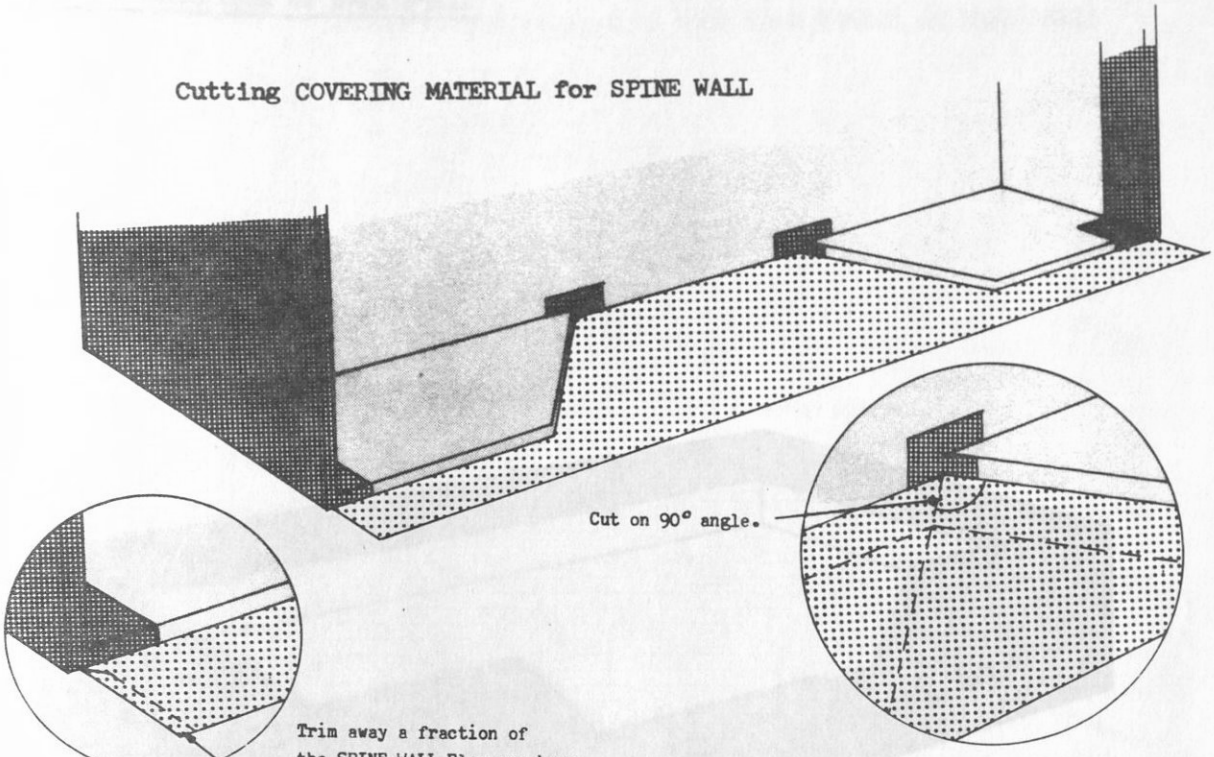




Remember that all Tongues for all corners must be glued and pulled over into place before the large side Flaps can be glued and pulled over into place. Glue Tongues and pull over corners forming pleats. Extend Tongues down corner walls keeping them centered. Note the Flaps will be pulled slightly forward at the corner as a consequence of gluing down the Tongues. Glue out and adhere Flaps.

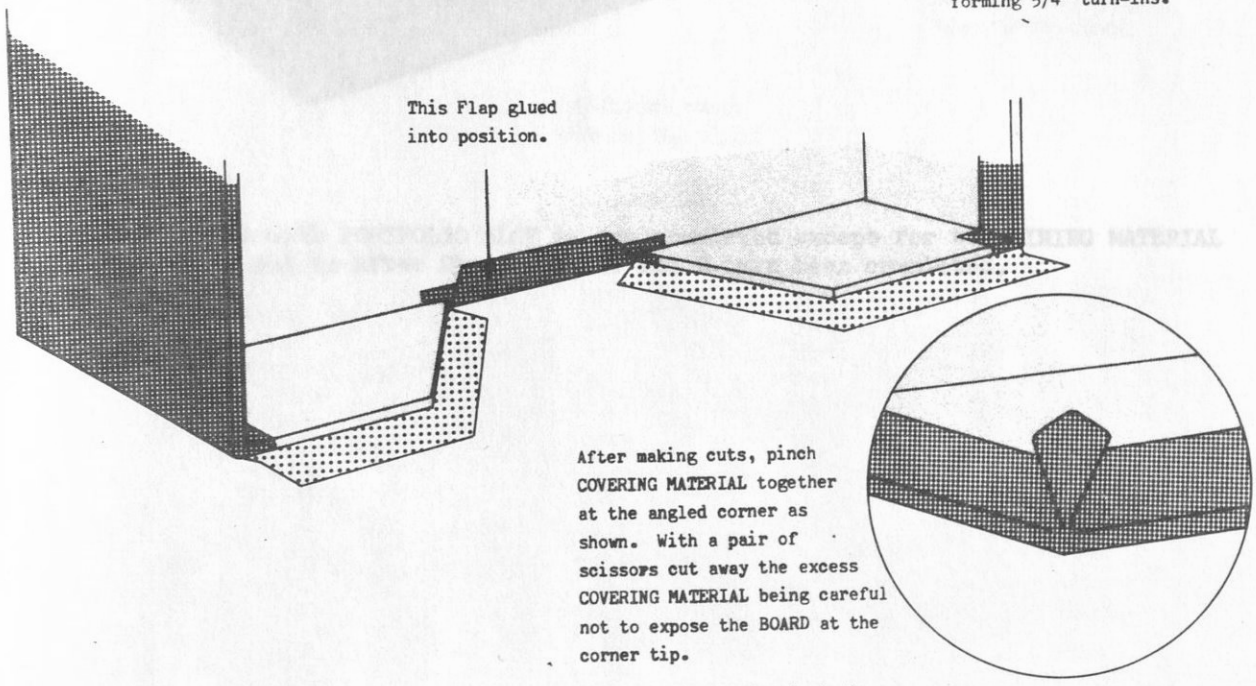
COVERING TECHNIQUE OF BASE SHELL

Cutting COVERING MATERIAL for SPINE WALL



Trim away a fraction of the SPINE WALL Flap as shown in detail so that the Flap will fit neatly into the corner when turned in.

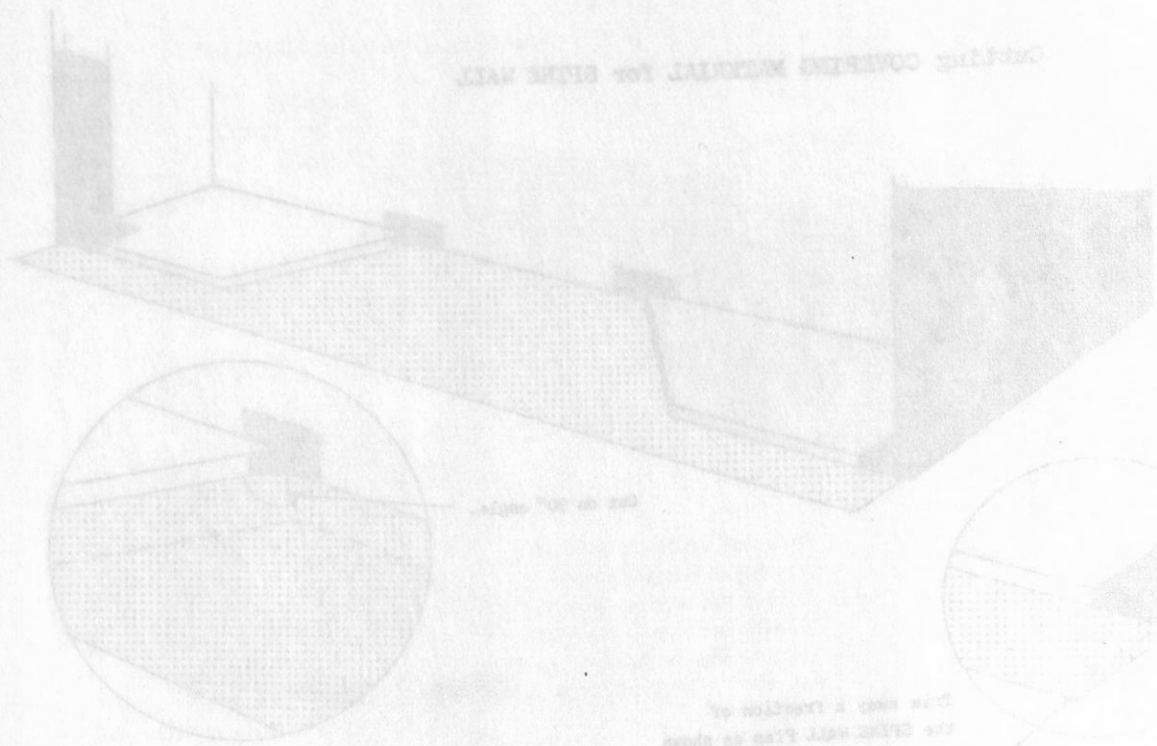
Cut COVERING MATERIAL prarllel to SPINE WALL and SHELF BOARD forming 3/4" turn-ins.

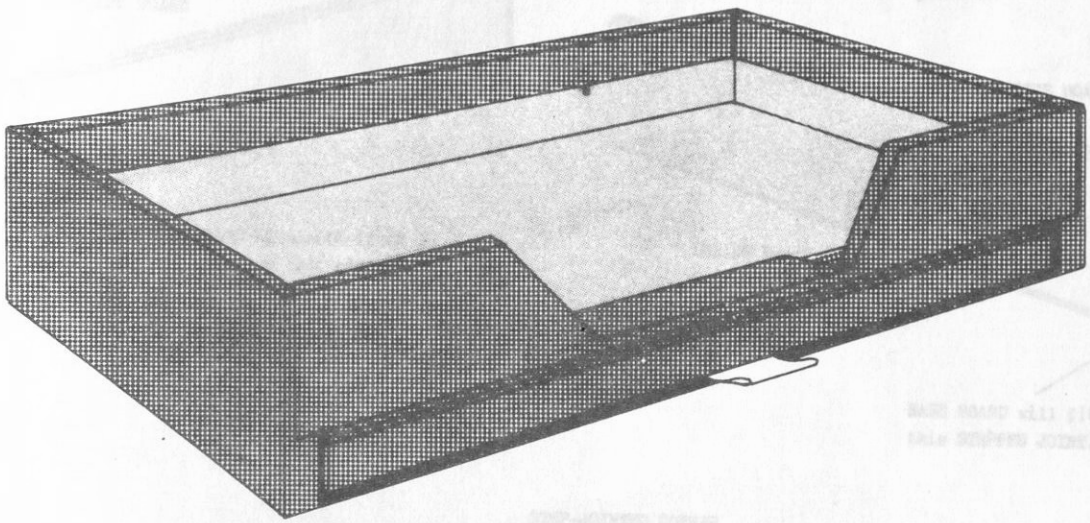


This Flap glued into position.

After making cuts, pinch COVERING MATERIAL together at the angled corner as shown. With a pair of scissors cut away the excess COVERING MATERIAL being careful not to expose the BOARD at the corner tip.

Glue out and neatly pleat the COVERING MATERIAL at the corner.





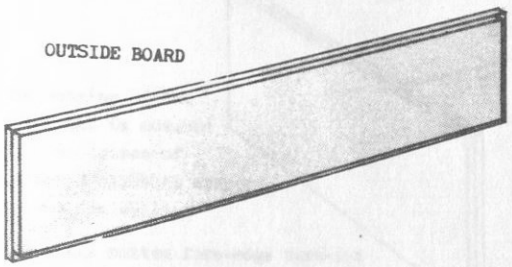
The BASE SHELL with PORTFOLIO SLOT is now completed except for the LINING MATERIAL which will be put in after Steps III, IV and V have been completed.

ASSEMBLING BOARDS TO MAKE LID SHELL

INSIDE and OUTSIDE BOARDS correctly placed to form WALL BOARDS of BASE SHELL

Head WALL BOARD pattern

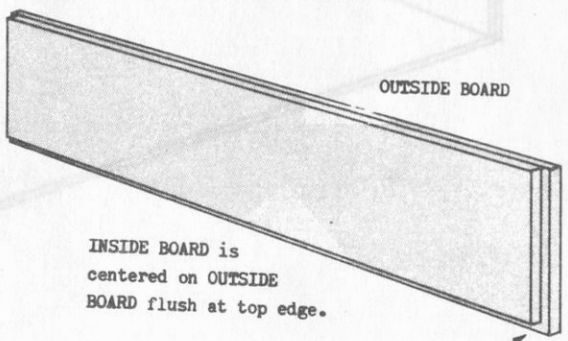
Tail WALL BOARD pattern is a mirror image of the Head WALL BOARD pattern.



INSIDE BOARD is placed flush at top edge and left edge.

For mirror image make INSIDE BOARD flush at top and right edge.

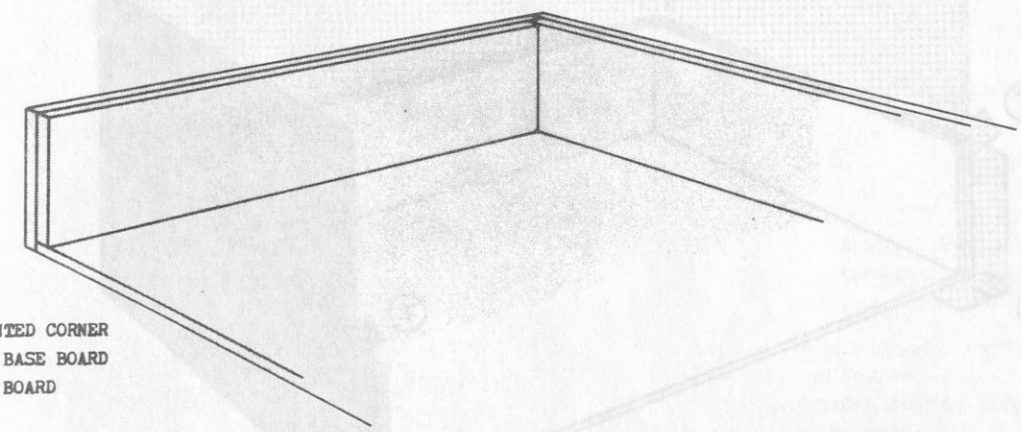
Fore-edge WALL BOARD pattern



INSIDE BOARD is centered on OUTSIDE BOARD flush at top edge.

BASE BOARD will fit into this STEPPED JOINT.

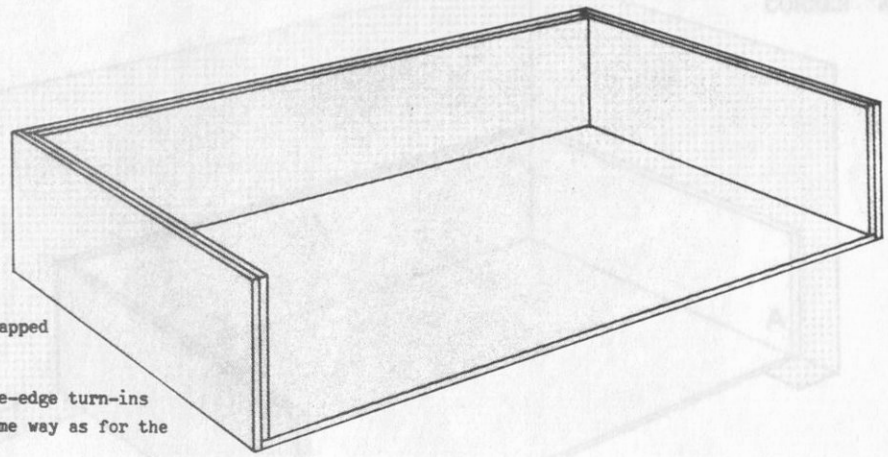
STEP-JOINTED CORNER formed by WALL BOARDS



STEP-JOINTED CORNER formed by BASE BOARD and WALL BOARD

COVERING TECHNIQUE of LID

Assembled LID SHELL before COVERING MATERIAL is adhered.

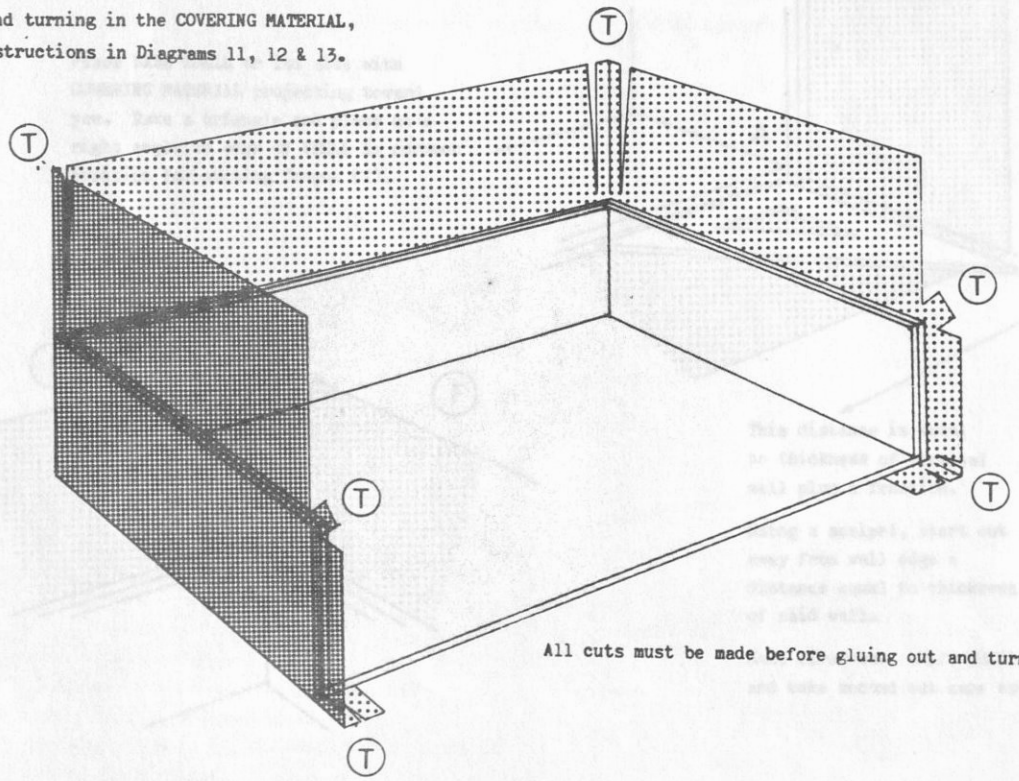


The outside of the LID SHELL is covered with one piece of COVERING MATERIAL wrapped around the walls.

LID SHELL bottom fore-edge turn-ins are completed the same way as for the BASE SHELL.

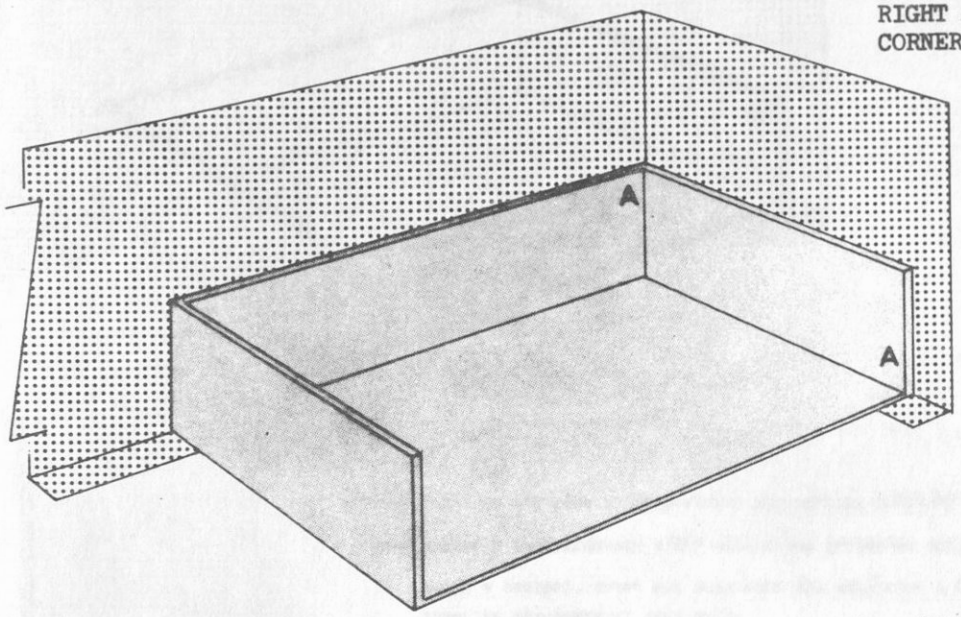
LID SHELL wall turn-ins:

For cutting and turning in the COVERING MATERIAL, follow the instructions in Diagrams 11, 12 & 13.

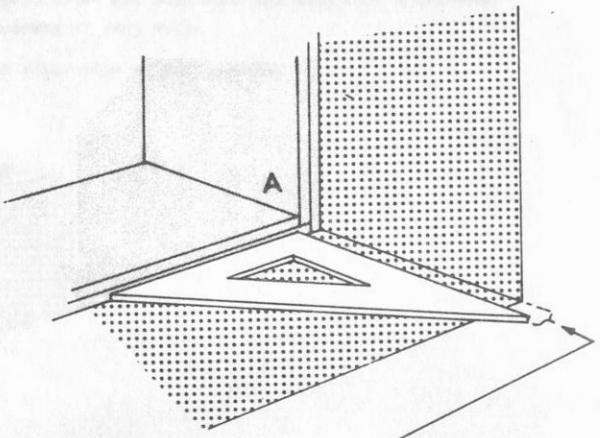


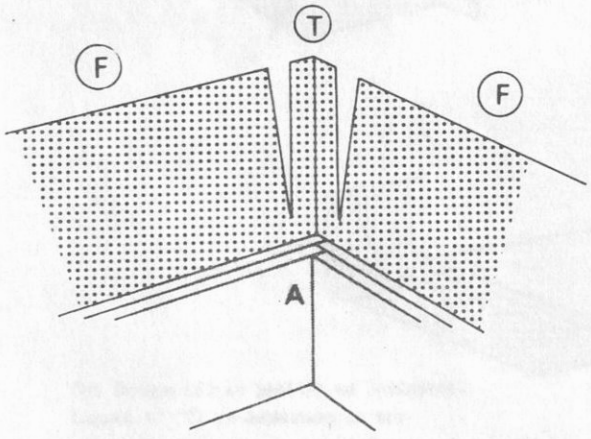
All cuts must be made before gluing out and turning in.

Cutting COVERING MATERIAL
for
JOINTED
RIGHT ANGLE
CORNER "A"



Place BASE SHELL on its side with COVERING MATERIAL projecting toward you. Take a triangle and place at a right angle to edge of SHELL in correct position for cutting Tongue (T).





This distance is equal to thickness of vertical wall plus a fraction.

Using a scalpel, start cut away from wall edge a distance equal to thickness of said wall.

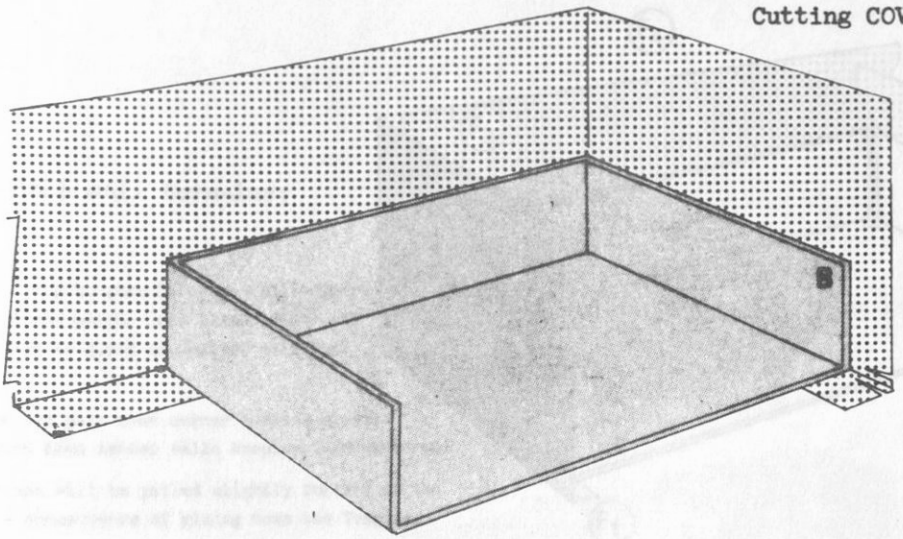
Make first cut, shift SHELL and make second cut same as first.

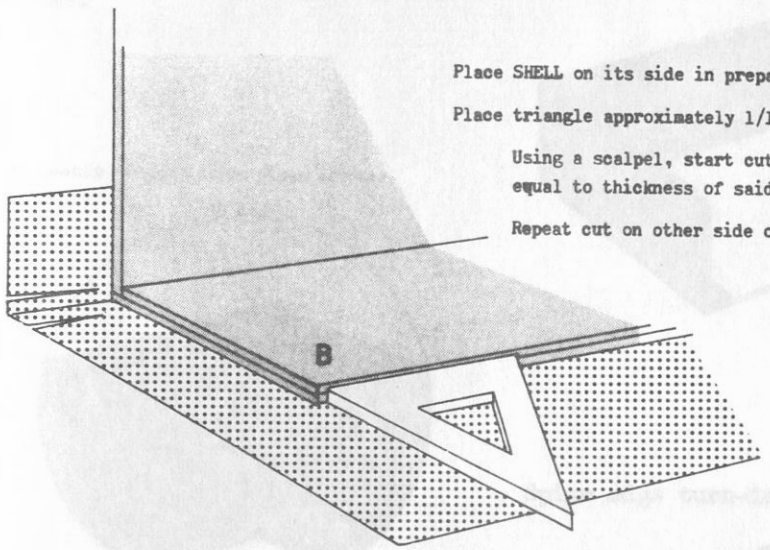
A
A

A

A

Cutting COVERING MATERIAL
for
FLAT
RIGHT ANGLE
CORNER "B"



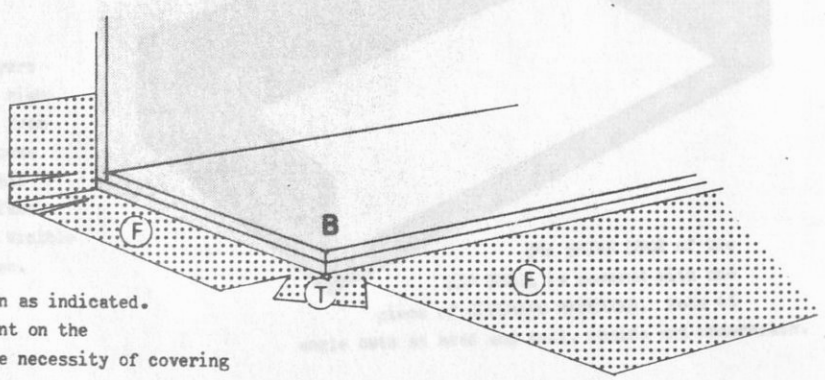


Place SHELL on its side in preparation for cutting COVERING MATERIAL.

Place triangle approximately 1/16" within the projected wall line.

Using a scalpel, start cut away from the wall edge a distance equal to thickness of said wall.

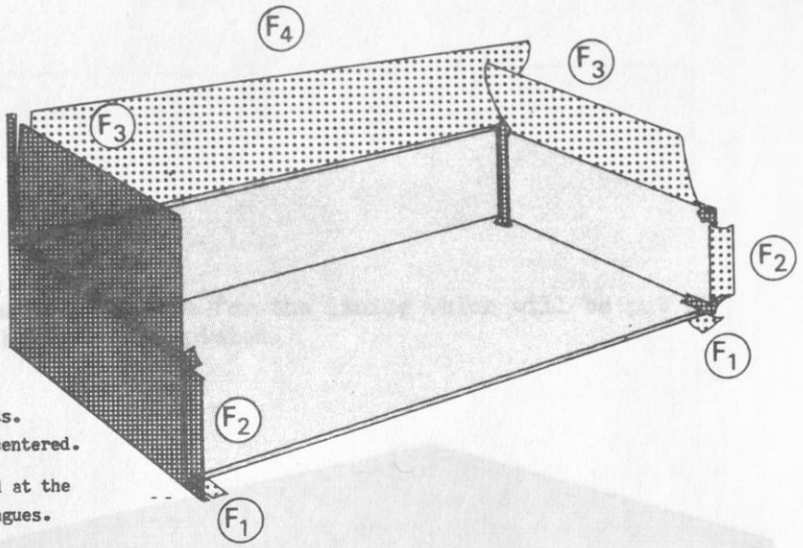
Repeat cut on other side of flat corner.



Cut Tongue (T) in pattern as indicated.
Length of (T) is dependent on the thickness of wall and the necessity of covering corner tip comfortably.

COVERING TECHNIQUE of LID SHELL

LID SHELL wall turn-ins:

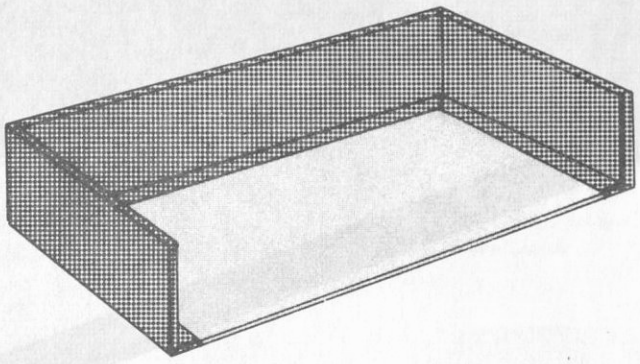


Remember that all Tongues (T's) for all corners must be glued and pulled into place before the Flaps (F's) can be glued and pulled over into place.

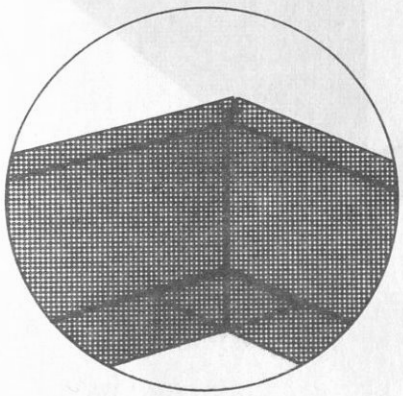
Glue Tongues and pull over corner forming pleats. Extend Tongues down corner walls keeping them centered.

Note that Flaps will be pulled slightly forward at the corners as a consequence of gluing down the Tongues.

Glue out and adhere Flaps according to their numerical order.

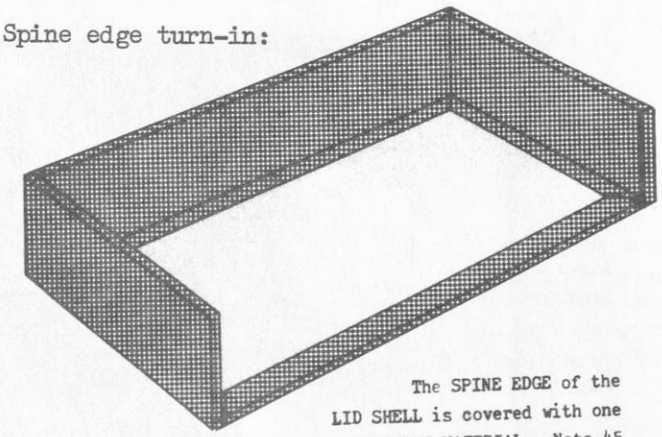


To neatly finish inside floor corner:

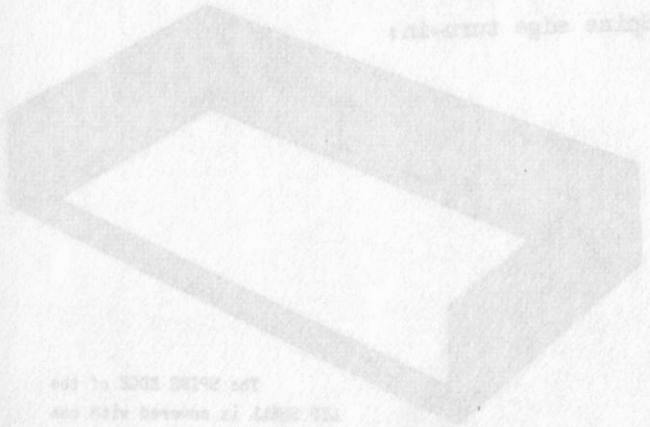


Make a clean cut through the two layers of COVERING MATERIAL, bisecting the right angle at the corner. Remove excess from top layer, lift up and pull away excess underneath. Replace top layer so that COVERING MATERIAL butts and the surface is level. Part of this cut will be visible after the LINING MATERIAL is in place.

Spine edge turn-in:

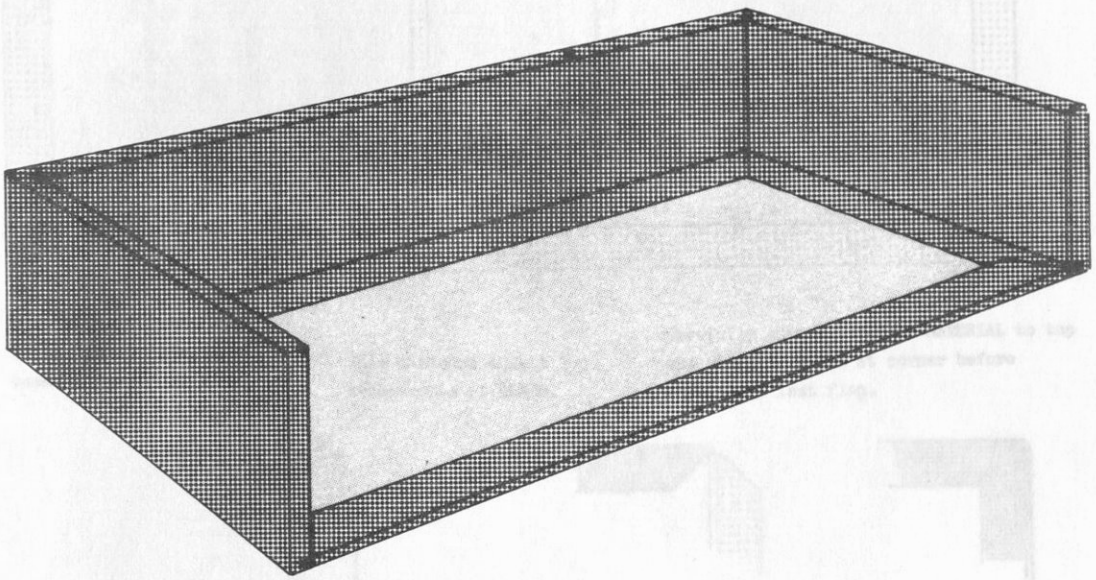


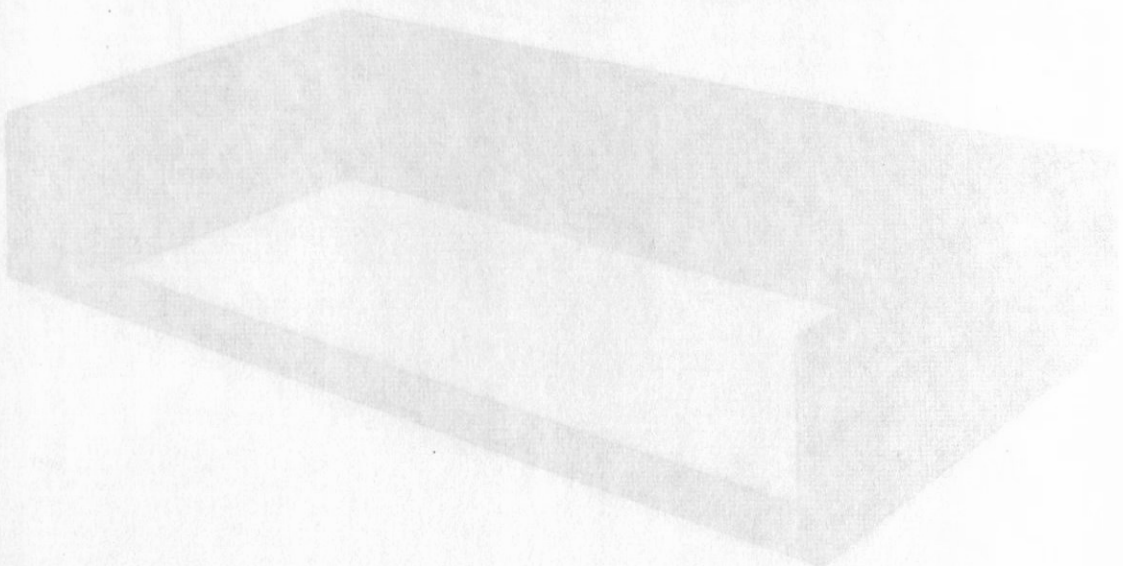
The SPINE EDGE of the LID SHELL is covered with one piece of COVERING MATERIAL. Note 45 angle cuts at head and tail, inside and underneath.



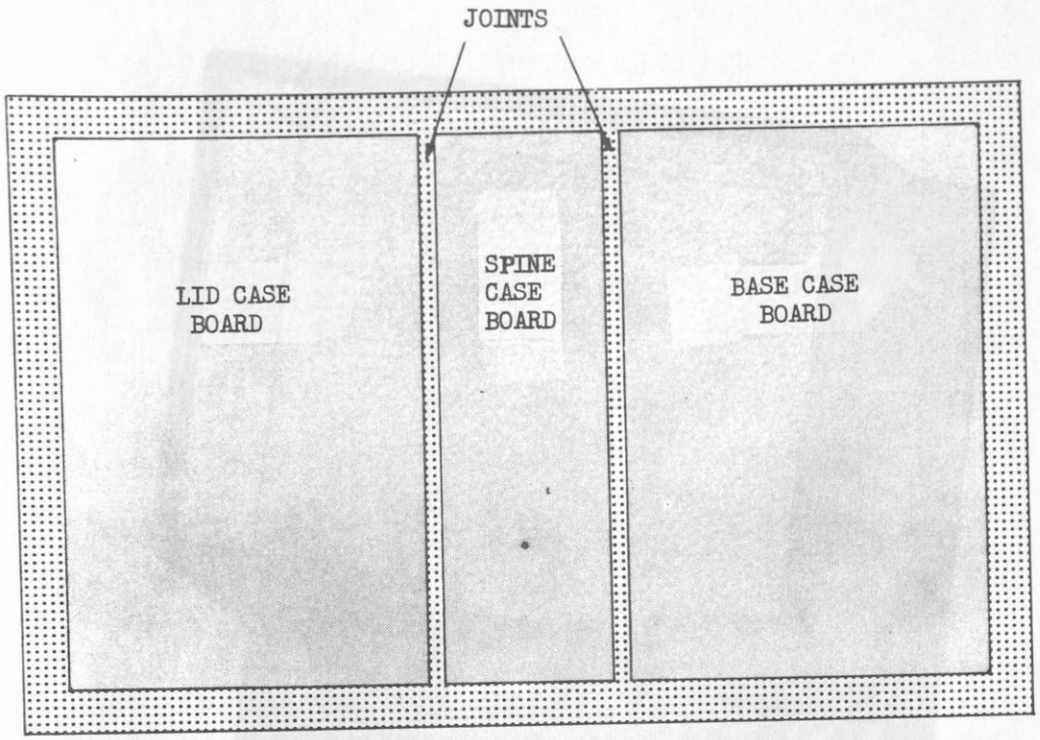
COVERING TECHNIQUE of LID SHELL

The LID SHELL is now completed except for the lining which will be put in after Steps III and IV have been completed.





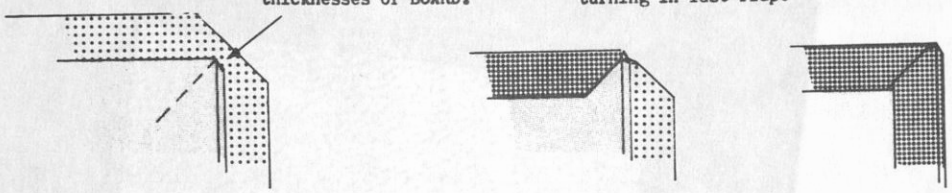
COVERING TECHNIQUE of CASE

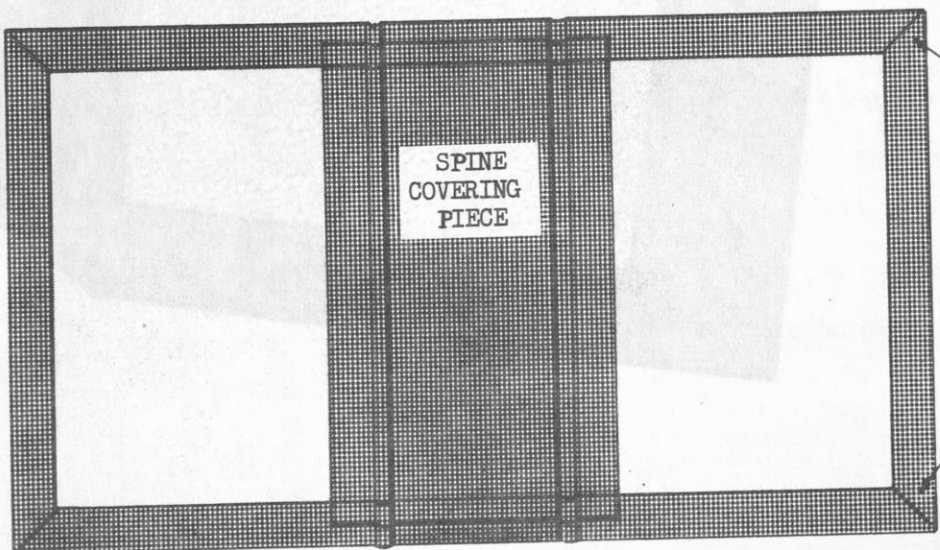


Corner cut is perpendicular to imaginary line that bisects corner of BOARD.

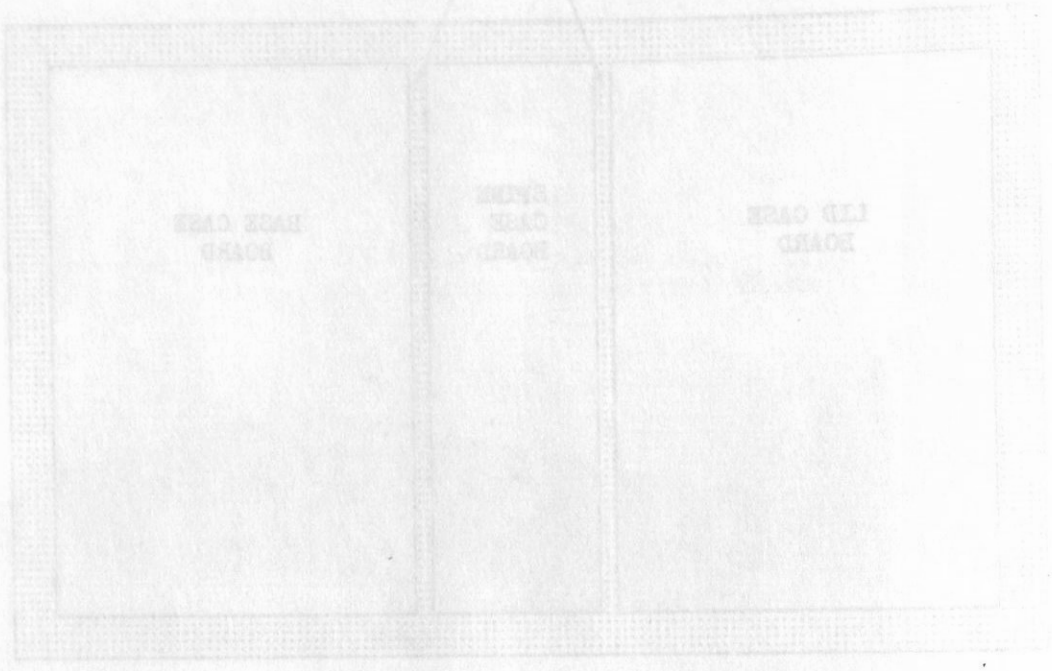
This distance equals 2 thicknesses of BOARD.

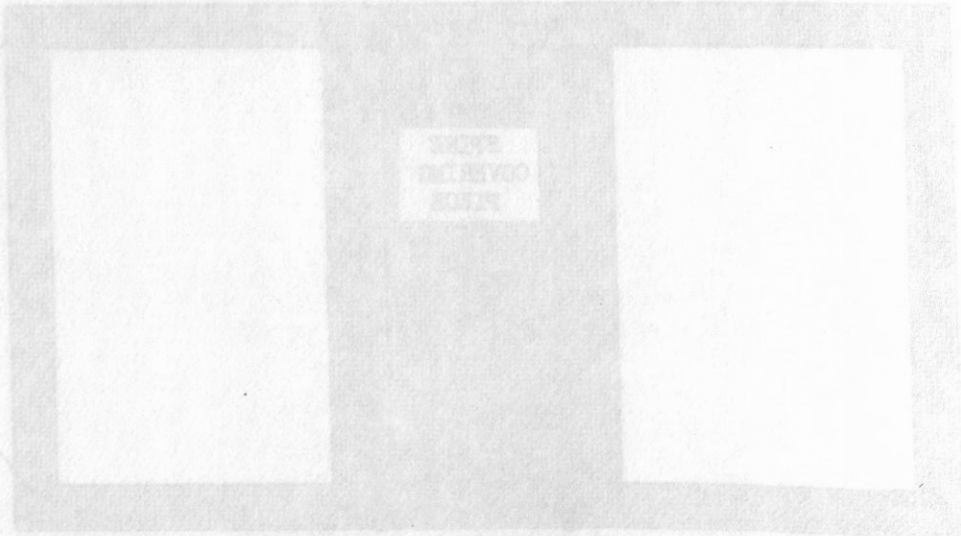
Carefully adhere COVERING MATERIAL to top and sides of BOARD at corner before turning in last flap.



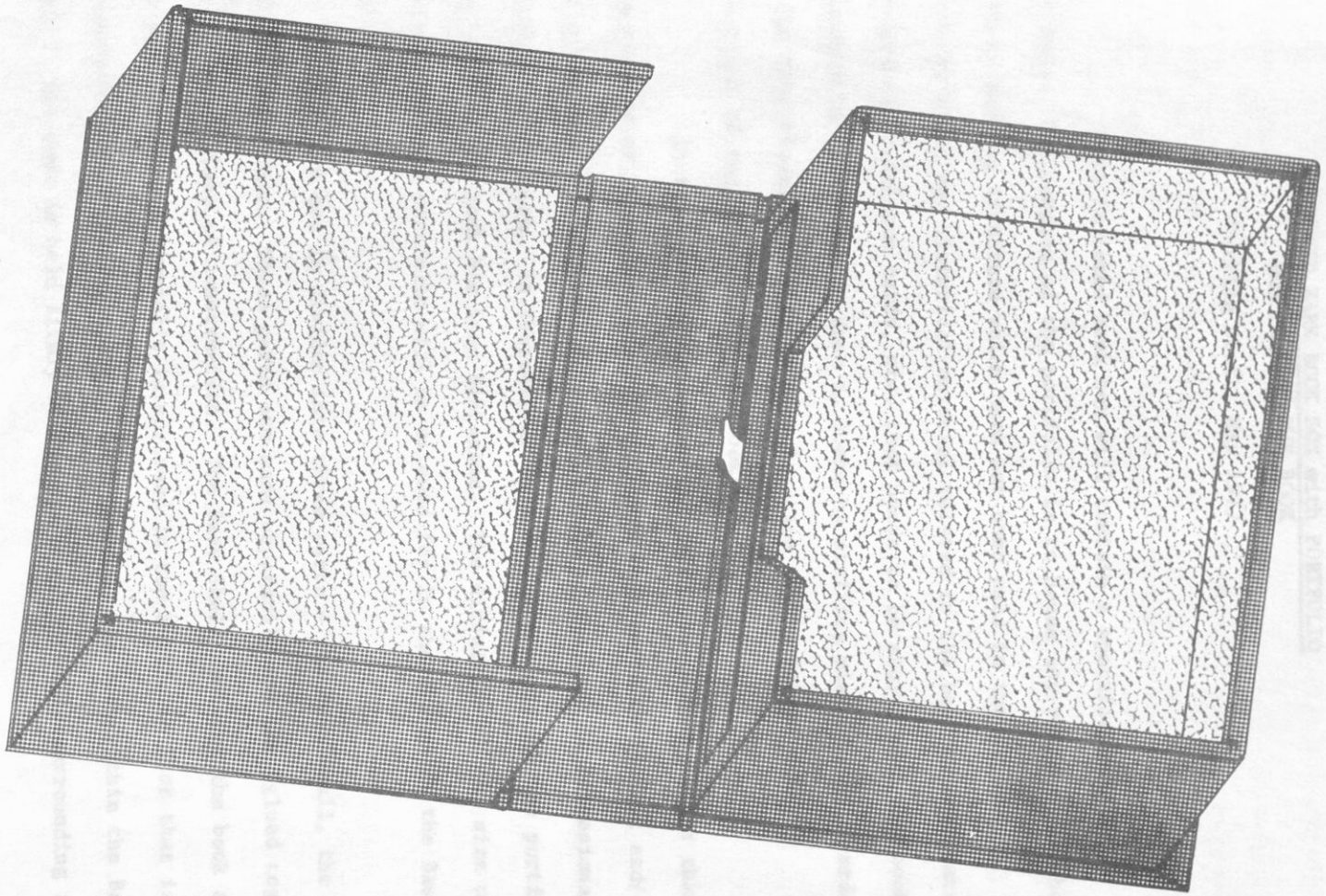


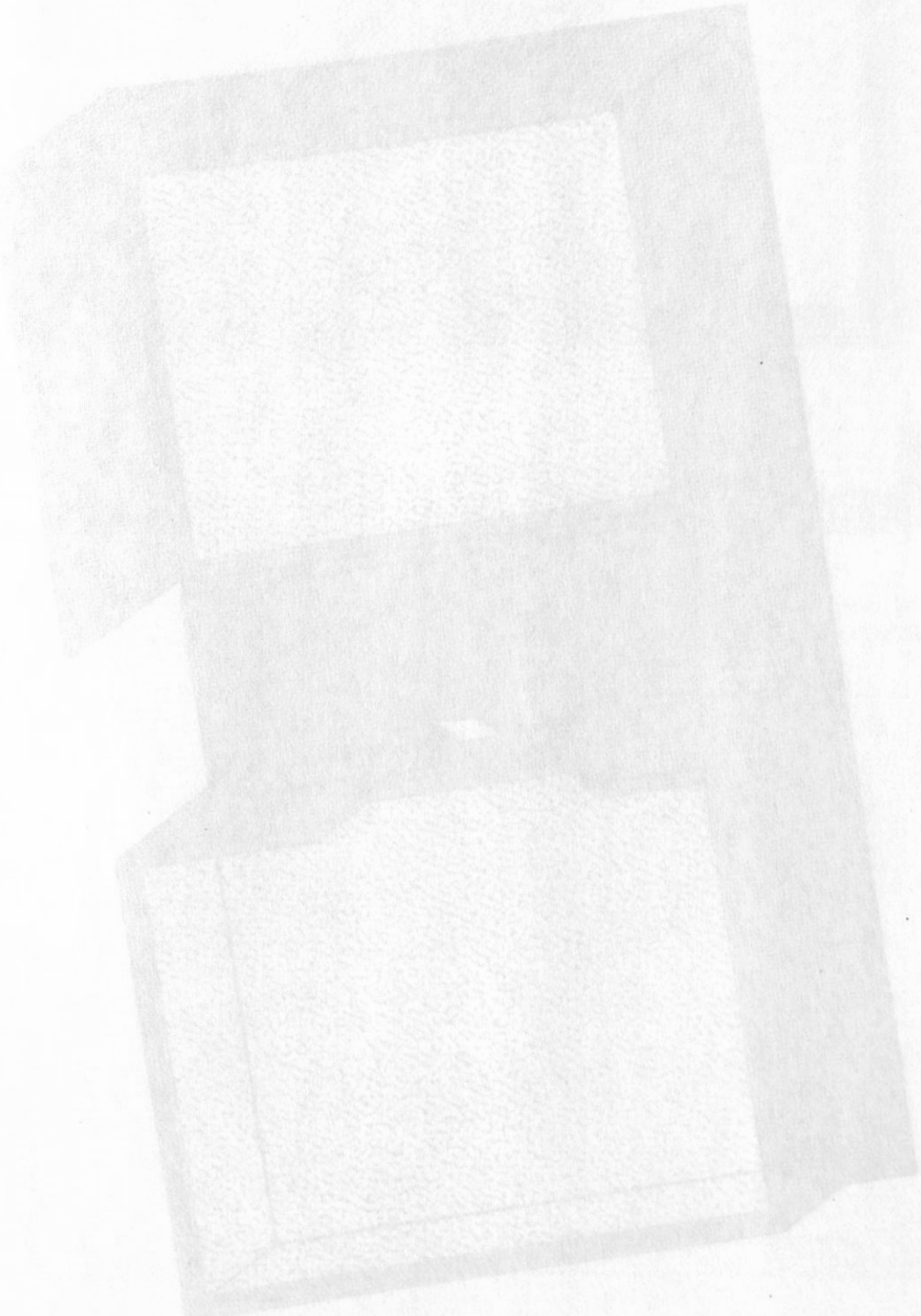
Note: Be sure to make clean cuts and a neat turn-in as the fore-edge tips of BASE CASE BOARD will be visible after the BASE SHELL is attached.





A completed STANDARD RARE BOOK BOX with PORTFOLIO SMALLER THAN THE BOOK





STANDARD RARE BOOK BOX with PORTFOLIO LARGER THAN THE BOOK

Working Draft, May 1977

This tailored book box will contain a specific book and a portfolio. The purpose of the portfolio is to house any remnants of the previous binding structure which have not been used in the re-binding and/or to house any historical material related to the book such as letters, photographs, catalogue cards, etc. that needs to be stored with the book. Considerable damage can be done to books by stuffing miscellaneous cards in the text blocks resulting in discoloration of the leaves and/or distortion of the structure of the book.

In this particular design the portfolio is made larger than the book because of a previous binding structure that needs to be kept and/or the collection of historical material related to the book is dimensionally larger than the book. In theprevious chapter the design with the portfolio smaller than the book has been discussed. The difference in the size of the book and the portfolio will be allowed for in the design of the Base Shell.

The box is divided into three parts - the Base Shell, the Lid Shell and the Case. These parts are made separately and then glued together in the final steps of construction. The Base Shell contains the book and the portfolio. The portfolio is enclosed in the Portfolio Slot that is constructed under the Shelf Board which supports the book within the Base Shell. The book is held firmly within the shell by walls surrounding it on

four sides. A soft lining material is adhered to the walls and floor of the shell to protect the cover and spine of the book from abrasion. An angled opening in the center of the spine wall allows for the book to be lifted from the box at the spine. This spine wall helps to keep the walls of the Base Shell rigid and also prevents the reader from opening the book within the box.

The Lid Shell completely covers the Base Shell providing strength to the walls of the box, and it helps to make the box dust proof. This enclosure provides a relatively stable inner environment that will be slow to react to moderate fluctuations in the atmosphere outside the box, and it protects the book from damage due to sunlight. Lining material is adhered to the inside floor of the Lid Shell and when the Lid is closed, this soft material lies against the top cover of the book protecting it from abrasion.

The Case, on which the Base Shell and the Lid Shell are glued, helps maintain rigidity and gives strength to the top and the bottom of the box. The Case fits flush with the outer walls of the Lid Shell allowing the box to be stored in a horizontal or a vertical position.

The listing of materials to be used in making this box follows.

ADHESIVE: An internally-plasticized polyvinyl acetate aqueous emulsion

BOARD: Any neutral pH or alkaline board of suitable durability and permanence

COVERING MATERIAL: Starch-filled buckram

FILLER BOARDS: Scrap board cut to inner dimensions of the Base and/or Lid Shells. A sufficient quantity is needed to fill the shells and extend 3/4" above the walls.

LINING MATERIAL: Handmade paper of neutral color or
"Permalife" paper or
Felt of neutral color

PAPER - Bonding/Filler Paper:
A paper of similar color of the COVERING MATERIAL, used to cover the bottom of the BASE and/or LID SHELL to effect a good bond between the SHELL and the CASE.

Before construction of a STANDARD RARE BOOK BOX with PORTFOLIO LARGER THAN THE BOOK certain basic decisions must be made about the thicknesses of the various components of the box, which relate to the size and the weight of the book to be enclosed. For example, if the book to be boxed is especially heavy, cosider what thickness of Shelf Board is needed to accurately support such weight without bowing the Shelf Board. A MEASURING KIT (See General Information) of the various combinations of boards, coverings and linings should be made for ease of measuring throughout the construction of the box. Once these materials have been chosen, carry out the following steps as designated in the OPERATIONAL SEQUENCE.

OPERATIONAL SEQUENCE:

I. PORTFOLIO

II. BASE SHELL WITH PORTFOLIO SLOT

A. MEASURING AND CUTTING BOARDS FOR BASE SHELL
B. ASSEMBLING BOARDS TO MAKE BASE SHELL
C. COVERING TECHNIQUE OF BASE SHELL

III. LID SHELL

A. MEASURING AND CUTTING BOARDS FOR LID SHELL
B. ASSEMBLING BOARDS TO MAKE LID SHELL
C. COVERING TECHNIQUE OF LID SHELL

IV. CASE

A. MEASURING AND CUTTING BOARDS FOR CASE
B. COVERING TECHNIQUE OF CASE

V. GLUING BASE SHELL, LID SHELL AND CASE TOGETHER

A. GLUING BASE SHELL TO CASE
B. GLUING LID SHELL TO CASE

VI. LINING THE INTERIOR OF THE BOX

A. LINING THE BASE SHELL
B. LINING THE LID SHELL

I. PORTFOLIO

The PORTFOLIO is to be constructed first. This PORTFOLIO is larger than the BOOK. The dimensions of the BASE BOARD will be determined by the size of the material to be housed in the PORTFOLIO. Make it according to the instructions in Chapter 4 of this pamphlet. Remember that this PORTFOLIO must have a PULL in order to remove it from the PORTFOLIO SLOT.

II. BASE SHELL WITH PORTFOLIO SLOT

A. MEASURING AND CUTTING BOARDS FOR BASE SHELL

See diagrams 1 & 2. The shaded area of the BASE SHELL indicate the dimensions of the SHELF BOARD and the BASE BOARD. Note that these BOARDS are the same size. Accurate cutting to give 90° angles at corners is essential.

The dimensions of the SHELF BOARD and BASE BOARD are difficult to obtain. Both the PORTFOLIO and the BOOK are used to obtain the correct dimensions.

1. SHELF BOARD and BASE BOARD
   Length, head to tail: Length of PORTFOLIO
   plus 2 thicknesses of COVERING MATERIAL
   plus 5 thicknesses of BOARD
   (1 thickness of BOARD is for clearance

   Cut 3 BOARDS thislength with their width equal to the width of the PORTFOLIO plus 2".

It is now necessary to obtain the measurement of the thickness of the LINING WALL that will line the interior of the BASE SHELL walls.

Note that the difference in size of the PORTFOLIO and BOOK is taken up by a LINING WALL which is composed of BOARD covered on both sides with LINING MATERIAL rather than a single thickness of LINING MATERIAL as in the other box designs. See diagram #1. In this BOX design FELT is used as the LINING MATERIAL.

Take the BOOK and place the tail flush with the bottom edge of one of the above cut BOARDS. At the head of the BOOK add:

4 thicknesses of BOARD
plus 2 thicknesses of COVERING MATERIAL
plus 4 thicknesses of FELT

Next determine the number of thicknesses of BOARD that are required to fill up the remaining space at the head of the BOARD. Half this number, covered on both sides with FELT, will make up one LINING WALL.

SHELF BOARD and BASE BOARD (Cont'd)

Width, spine to fore-edge: Width of BOOK
plus 2 thicknesses of LINING WALL
that has just been determined
plus 2 thicknesses of COVERING MATERIAL
plus 5 thicknesses of BOARD

Mark this distance on the 3 BOARDS.

Check this width measurement by comparing it to the width of the PORTFOLIO plus 2 thicknesses of BOARD. If the PORTFOLIO plus 2 thicknesses of BOARD is wider, then the above width measurement of the SHELF BOARD and BASE BOARD must be increased to accomodate for this difference. In constructing this BOX, use whichever measurement is greater as the width measurement for the BOARD. Note that this increase in width of the SHELF BOARD will mean that the thickness of the LINING WALL must be increased when finally lining the interior of the BASE SHELL.

Cut the above three BOARDS the correct width. Glue two BOARDS together forming the SHELF BOARD. Mark the exposed side of the BOARD which is glued out. In a future step this marked side will be covered with COVERING MATERIAL.

The remaining BOARD is the BASE BOARD.

2. SUPPORT BOARDS surrounding PORTFOLIO
See diagrams 1,2& 3. Note the SUPPORT BOARDS. Depending on the over-all size of the BOX, enough thicknesses of BOARD must be assembled to adequately support the SHELF BOARD which in turn supports the BOOK. In these instructions the minimal amount (2 thicknesses of BOARD) is being used at the Head and Tail.

Height of SUPPORT BOARDS: Equal to height of PORTFOLIO
plus 2 thicknesses of COVERING MATERIAL
plus 1/16" for clearance

Length of SUPPORT BOARDS: Length is dependent upon the number of SUPPORT BOARDS and the pattern chosen for gluing them together. (In diagram 4 the fore-edge SUPPORT BOARDS are the same length as the BASE BOARD.)

Number of SUPPORT BOARDS: The number of BOARDS needed on the three sides of the PORTFOLIO is determined by the space available. Remember to allow for clearance (approximately 1/16") at the Head and Tail of the PORTFOLIO.

Cut SUPPORT BOARDS to appropriate sizes and glue them together as shown in diagram 3.

3. WALL BOARDS OF BASE SHELL
See diagrams 1, 2 & 3.

Remember that the walls are made up of BOARDS designated INSIDE and OUTSIDE. One exception is that the BOARDS making up the SPINE WALLS are INSIDE BOARDS. All INSIDE BOARDS attach to the top of the BASE BOARD. All OUTSIDE BOARDS attach to the outside edges of the BASE BOARD.

For these instructions there are 12 INSIDE BOARDS and 3 OUTSIDE BOARDS.

Height of BASE SHELL walls:

INSIDE BOARDS: Height is equal to the height of the BOOK
plus 1 thickness of COVERING MATERIAL
plus 2 thicknesses of LINING MATERIAL

Cut 12 BOARDS this height with their lengths approximately 3/4" longer than the BASE BOARD.

OUTSIDE BOARDS: Height is equal to the height of the BOOK
plus 3 thicknesses of COVERING MATERIAL
plus 2 thicknesses of LINING MATERIAL
plus 3 thicknesses of BOARD
plus height of PORTFOLIO
plus 1/16" for clearance

Cut 3 BOARDS this height with their lengths approximately 3/4" longer than the BASE BOARD.

Length of BASE SHELL walls:
Cut the 12 INSIDE BOARDS and the 3 OUTSIDE BOARDS the following lengths:

Head and Tail Walls: Two INSIDE BOARDS equal to width of BASE BOARD
minus 1 thickness of BOARD

Two INSIDE BOARDS equal to width of BASE BOARD
minus 3 thicknesses of BOARD

Two OUTSIDE BOARDS equal to width of BASE BOARD
plus 1 thickness of BOARD

Fore-edge Wall: One INSIDE BOARD equal to length of BASE BOARD
minus 2 thicknesses of BOARD

One INSIDE BOARD equal to length of BASE BOARD
minus 4 thicknesses of BOARD

One OUTSIDE BOARD equal to length of BASE BOARD

Spine Wall: Six INSIDE BOARDS

The length of each of these BOARDS should be approximately 1/3 the length of the SHELF BOARD. Note the angled shape of these walls and how the three must vary in length by 1 thickness of BOARD in order to notch properly into the corner. Closely examine diagrams 2 & 3.

Mark each BOARD either "INSIDE" or "OUTSIDE".

B. ASSEMBLING BOARDS TO MAKE BASE SHELL

Glue corresponding INSIDE and OUTSIDE BOARDS together in the correct pattern as shown in diagram 3. Press these BOARDS together.

Glue the assembled Head, Tail and Fore-edge WALL BOARDS together forming the two STEP-JOINTED CORNERS as shown in diagram 4.

Glue BASE BOARD edges and attach WALL BOARDS.

Glue assembled SUPPORT BOARDS and position them as shown in diagram 4. (Note the groove formed to hold the SHELF BOARD.)

C. COVERING TECHNIQUE OF BASE SHELL

1. COVERING SHELF BOARD
TAke the SHELF BOARD and cut a piece of COVERING MATERIAL the following size:

Length: Exact length of SHELF BOARD

Width: Width of SHELF BOARD
plus the height of the SPINE WALLS of the BASE SHELL
plus 3/4"
(This COVERING MATERIAL will eventually cover the SPINE WALLS of the shell extending over onto the inner side of the shell.)

Glue out the marked side of the SHELF BOARD and attach COVERING MATERIAL as shown in diagram 4. Put this under weights and set aside.

2. CUTTING AND GLUING OUT COVERING MATERIAL FOR PARTIALLY ASSEMBLED BASE SHELL

a. The outside of the BASE SHELL is covered with one piece of COVERING MATERIAL wrapped around the three walls. See diagram 5. The dimensions of this piece are:

Length: Distance around the outside of the three walls plus 2" (or whatever distance is needed to adequately cover SUPPORT BOARDS and extend into the PORTFOLIO SLOT at least 3/4" on each side.)

Width: Equals height measurement of the outside walls plus 1½" for turn-ins

Glue out the COVERING MATERIAL and adhere to the outside of the walls of the BASE SHELL. The cloth strip is positioned so that 3/4" extends above and below the edges of the BASE SHELL.

b. BASE SHELL bottom fore-edge turn-ins:
Turn the SHELL over and cut the COVERING MATERIAL of the fore-edge bottom corners as shown in diagram 5.

After cutting the COVERING MATERIAL at the corners, re-glue the unattached COVERING MATERIAL and turn in.

c. Cutting and gluing out COVERING MATERIAL for Cut "C":
See diagram 6 for instructions.

d. Covering BASE SHELL floor:
Cut a piece of COVERING MATERIAL the following size:

Length: Exact length of SHELL floor

Width: Width of SHELL floor
plus 1" for turn-in on spine edge

Glue out and attach this piece to SHELL floor as shown in diagram 7.

3. COMPLETING ASSEMBLY OF BASE SHELL AND COMPLETING BASE SHELL WALL TURN-INS

a. SHELF BOARD with COVERING MATERIAL attached is slipped in the groove formed between the SUPPORT BOARDS and the inside of the WALL BOARDS. See diagram 7.

b. SPINE WALL BOARDS attached:
Glue the notched corner edges and base edges of SPINE WALL BOARDS and place in correct position as shown in diagram 8.

Glue out and turn in unattached COVERING MATERIAL that is to wrap around onto SPINE WALLS as shown in diagram 8.

Cut little TABS of COVERING MATERIAL and place them at the inside lower angled corners of the SPINE WALLS. See diagram 8.

c. BASE SHELL wall turn-ins:

1) Follow the directions for cutting COVERING MATERIAL of Corners "A" found in diagram 9.

Glue out and turn in all Tongues (T's) before gluing out and turning in Flaps. See detail in diagram 9.

2) The SPINE FLAP extending from the SHELF BOARD is now glued into place. The cutting pattern for the turn-ins is explained in diagram 10.

4. COVERING UNDERSIDE OF BASE SHELL

Cut a piece of PAPER (Bonding/Filler) 1/8" smaller on all four sides than the underside of the BASE SHELL, and similar in color to the COVERING MATERIAL, and glue it into place. The purpose of this PAPER is to effect a good bond between the SHELL and the CASE.

The BASE SHELL with PORTFOLIO SLOT is now completed except for lining the interior. See diagram 11. Do not proceed with lining until Steps III, IV and V have been completed.

III. LID SHELL

A. MEASURING AND CUTTING BOARDS FOR LID SHELL

See diagram 1. The shaded area of the LID SHELL indicates the dimensions of the LID BOARD.

1. LID BOARD

Length, head to tail: Length of covered BASE SHELL, plus 2 thicknesses of COVERING MATERIAL, plus 5 thicknesses of BOARD (one thickness is for clearance)

Width, spine to fore-edge: Width of covered BASE SHELL, plus 1 thickness of COVERING MATERIAL, plus 2 thicknesses of BOARD

Cut one BOARD.

2. WALL BOARDS of LID SHELL
Remember that the walls are made up of BOARDS designated INSIDE and OUTSIDE. See diagram 12.

Height of LID SHELL walls:

INSIDE BOARDS: Height is equal to the height of the covered BASE SHELL
plus 3 thicknesses of COVERING MATERIAL

Cut 6 BOARDS this height with their lengths approximately 3/4" longer than the LID BOARD.

OUTSIDE BOARDS: Height is equal to height of INSIDE BOARD plus 1 thickness of BOARD

Cut 3 BOARDS this height with their lengths approximately 3/4" longer than the LID BOARD.

Length of LID SHELL walls:
Cut the 6 INSIDE BOARDS and the 3 OUTSIDE BOARDS the following lengths:

Head and Tail Walls: Two INSIDE BOARDS equal to width of LID BOARD minus 1 thickness of BOARD

Two INSIDE BOARDS equal to width of LID BOARD

Two OUTSIDE BOARDS equal to width of LID BOARD plus 1 thickness of BOARD

Fore-edge Wall: One INSIDE BOARD equal to length of LID BOARD minus 4 thicknesses of BOARD

One INSIDE BOARD equal to length of LID BOARD minus 2 thicknesses of BOARD

One OUTSIDE BOARD equal to length of LID BOARD

Mark each BOARD either "INSIDE" or "OUTSIDE".

B. ASSEMBLING BOARDS TO MAKE LID SHELL

Glue corresponding INSIDE and OUTSIDE BOARDS together in the correct pattern as shown in diagram 12. Press these BOARDS together.

Glue the assembled WALL BOARDS together forming the two STEP-JOINTED CORNERS as shown in diagram 12& 13.

Glue LID BOARD edges and attach WALL BOARDS.

C. COVERING TECHNIQUE OF LID SHELL

1. CUTTING, GLUING OUT AND TURNING IN THE COVERING MATERIAL FOR THE LID SHELL WALLS

   a. The outside of the LID SHELL is covered with one piece of COVERING MATERIAL wrapped around the three walls. See diagram 13. The dimensions of this piece are:

      Length: Distance around the outside three walls of the LID SHELL
      plus 1½" for turn-ins

      Width: Double the height of the walls
      plus 1½" for turn-ins

      Glue out the COVERING MATERIAL and adhere to the outside of the walls of the LID SHELL. The cloth strip is positioned so that 3/4" extends below the bottom and beyond the spine edge of the walls of the LID SHELL.

   b. LID SHELL bottom fore-edge turn-ins:
      Turn the SHELL over and cut the COVERING MATERIAL at the bottom fore-edge corners as shown in diagram 5 .

      After cutting the COVERING MATERIAL at the corners, re-glue the unattached COVERING MATERIAL and turn in.

   c. LID SHELL wall turn-ins:
      Follow the directions for cutting COVERING MATERIAL at the corners marked "A" and "B" as found in diagrams 14& 15.

      Glue out and turn in all Tongues (T's). Then follow numerical sequence for gluing out and turning in Flaps (F's) as shown in diagram 16.